

School of Computing  
& Information Systems

**An Investigation of the Social Relationships and  
Social Interactions Amongst International Students  
Studying in Australia: A Case Study Using Facebook**

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June 2013

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# Abstract

This thesis investigates the role of Facebook on the social relationships and social interactions amongst a class of international students undertaking a University foundation study course in Australia. Rapid growth in the adoption and use of social media globally, particularly amongst young people, highlights both the appetite for social connection and the capacity of technology to be an enabler. Globally, Facebook is the most widely adopted digital social network and has built its success on leveraging this appetite for social connection. In the educational sector, institutions are increasingly using digital social networks, like Facebook, as mechanisms to support and enhance student experiences. In Australia, where the international student market is now the third largest export sector, there is strong interest in ensuring these students successfully achieve their educational goals. For international students a key aspect of achieving positive educational outcomes relates to the level of social support available while studying overseas. An important source of this social support comes from the social connections that these students form with others, particularly with those individuals who are geographically co-located. To date, however, assumptions about Facebook, its use and role in supporting social connections within educational environments and its specific role amongst international students studying abroad has received limited research attention. In this context, this research investigates what role, if any, Facebook plays amongst a class group of international students and how it influences their approaches to interactions and relationship maintenance.

The research methodology employed in conducting this exploratory investigation adopted a research philosophy drawing on a subjective ontology and an interpretivist epistemology. The research strategy involved a 15 month case study of a class of 52 international students enrolled in the University of Tasmania's Foundation Studies Program (FSP) course. The research design aimed to collect data on the students' social connections, their Facebook usage, and their adoption, use and experience with technology prior to, during and after the FSP course. The research design structured data collection through two key techniques: self-reported surveys and semi-structured interviews. Three surveys were undertaken at three different time points over the 15 month case study (at the commencement of the program; at the mid-point; and four months after the completion of the FSP course). Semi-structured interviews were also conducted with six selected participants six months after the conclusion of the FSP course.

Data analysis was conducted using three separate techniques. The first technique involved analysis of descriptive statistics from the data collated from the three surveys. This technique revealed who the participants were, their behaviours, technological skills (including the use of Facebook) and their interactions with each other over time.

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The second technique, drawing on approaches adapted from social network analysis generated a series of social network diagrams representing the relationships present between the students before, during and after the study course. The combined data analysis generated from the surveys was then examined and discussed to highlight key insights that were further examined through the third technique of semi-structured interviews. These interviews were conducted with six participants selected on criteria generated from the survey results. Analysis examined the interview transcripts and deployed a thematic coding approach (Strauss & Corbin, 1990). The codes produced from the interviews were interpreted to highlight the key semantic inter-relationships across the data. The combination of analysis and interpretation arising from the three streams generated key findings and these were then discussed in relation to the existing body of knowledge.

This exploratory research investigating the role of Facebook amongst international students has produced a number of key findings, which are:

1. There are three primary sets of factors that both stimulate and inhibit whether an initiated interaction proceeds and which communication mode is used. The three overlapping factors are the 'interaction convenience', 'environmental influences' and 'relationship strength'.
2. The influence of social relationship strength on moderate social relationships emerges as distinct in relation to Facebook use. Past research has identified a weak and strong category but this research identified an important moderate category.
3. Facebook is one of a range of technology based communication modes used by students. Despite Facebook's wide usage by students other technical methods of interaction will be used based on the method they wish to use to interact and with whom.
4. Facebook's role in social connection maintenance emerges as being influenced by the strength of the relationship that exists between the individuals connected. Facebook plays the most important role when the relationship between two individuals could be considered as moderate in strength.

In relation to social interactions amongst these students this research highlights three dominant factors: interaction convenience; environmental influences; and relationship strength. These three factors influence the choice of communication mode as well as the amount of time and effort that a student is willing to exert to engage in an interaction. This research highlights that the stronger the relationship the greater sensitivity exhibited in the selection of communication mode, the greater the willingness to interact and to overcome spatial or temporal barriers to interaction.

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Facebook is used as one communication mode amongst a suite of other choices including face-to-face and other technology based modes (e.g. Skype, MSN etc.). The choice and use of Facebook primarily relates to the convenience of communication offered for interactions that are generally not intimate in nature, rarely urgent in time and do not rely on high levels of interaction response.

In relation to the social relationships of these students, the research highlights that the importance of Facebook as a mode of maintaining social relationships relates directly to the nature and strength of that relationship. Significantly, its importance is highest amongst social relationships that are moderate in strength, those that can be broadly characterised as being friends. For these types of social relationships Facebook emerges as one of the most convenient and time efficient modes, particularly during periods when the students were not geographically co-located. For strong social relationships, while Facebook is still part of the suite of communication modes, individuals tended to opt for more direct communication approaches to support a greater level of intimacy. For weak social relationships, their lack of value lowers the importance of their maintenance over time.

This exploratory research into the role of Facebook amongst international students undertaking a foundation course at an Australian University contributes to knowledge at three levels. Firstly, at the substantive level, this research contributes a detailed case study on the role of Facebook amongst a small self-contained class of international students. It highlights that the social connections of international students evolve in complex ways that mitigate against simplistic assumptions about Facebook, its use and importance. Importantly, it reveals that the choice of Facebook does not reflect any inherent loyalty to the tool, such that it is likely to be substituted readily to accommodate changing social relationships and interaction needs. This case study suggests that instead of relying on technological approaches to teaching and supporting international students, educational institutions would be better served by encouraging and providing opportunities for social interaction between students. This can provide them with opportunities to form their own social support networks.

Secondly, at the methodological level, this research combined multiple data collection and data analysis techniques together as an innovative approach to overcoming the methodological limitations of previous research on Facebook. The use of this method allows greater insight into the influence of specific social connections and the role of Facebook in the communicative behaviours of international students over time.

Finally, at the theoretical level, this research has produced models that illustrate the connections that exist between social relationships, social interactions and the use of Facebook. These models illustrate how the changing nature of social connections in terms of strength interacts with convenience, location, time and the need for a communicative response.

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# Chapter One

# Introduction

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# **1 Chapter One – Introduction**

## **1.1 Introduction**

This thesis investigates the role and impact of Facebook on the formation and maintenance of social relationships and the social interactions amongst a class of international students undertaking a university foundational study course in Hobart, Tasmania.

This chapter provides an introductory overview of the background, method and outcomes that have resulted from this research investigation. It also specifically states the primary research questions and objectives that motivated the undertaking of this research.

This chapter is divided into the following sections:

- Section 1.2 provides background and a brief overview of the research. It looks to provide a concise summary of the motivations underpinning this thesis;
- Section 1.3 states the specific research questions and objectives that are driving the undertaking of this research;
- Section 1.4 briefly covers the approach that has been taken in order to undertake this research. It covers the philosophical underpinnings to the research and the specific details in regard to the method that was followed;
- Section 1.5 states the contributions that were made to the existing body of knowledge from undertaking this research;
- Section 1.6 provides an overview of each of the major chapters in this research thesis; and
- Section 1.7 briefly summarises the chapter.

## **1.2 Background**

This thesis presents a case study on the role that Facebook plays in the social relationships and social interactions of a class of international students undertaking a Foundation Studies Program (FSP) at the University of Tasmania, Australia. This section provides an overview of the background that led to the undertaking of this investigative research.



### **1.2.1 The Development of Information Technology**

In an information intensive world the improvements in and spread of information technology has contributed to the existence of the network society, a society based around the connections within and between networks (Castells, 1996). It has been argued that the flow and spread of information is as important as the flow of goods and services and with the development of the Internet and web technologies (Saariluoma, 2006), clearly, new ways of spreading and sharing information have emerged. A major aspect of this information sharing is the explosion in the popularity of digital social networks (such as Facebook & MySpace). These networks allow the interaction and strengthening of social ties between individuals and groups (boyd & Ellison, 2008) and this can now occur without the usual limitations of geographic distance and face-to-face contact (Beal & Strauss, 2008). In 2011, social networking was the most popular internet activity ahead of online shopping and communicating with others, according to a report by ComScore in 2011 (Digital Strategy Consulting, 2012).

### **1.2.2 Technology as an Enabler of Relationships and Interactions**

Interaction and communication via the use of technology has now become much more commonplace and is greatly influenced by the users who shape the mode type and how those modes are used for interaction (Poole & DeSantis, 1990; McLaughlin et al, 1995). Of the recent technological developments, the Internet is one such innovation that has greatly influenced the way in which individual human beings interact with each other (McKenna & Bargh, 1998).

The benefits that are derived from the Internet as a form of communication relate to its ability to connect people together. These connections can bring together people with similar interests (Rheingold, 2003; Constant, Kiesler & Sproull, 1996); allow them to stay in contact with family and friends (LaRose et al, 2001); and overcome barriers to communication such as geography, time restrictions, the importance of physical appearance and the pace of interaction (Haythornthwaite, 2002; McKenna & Bargh, 2000).

Technology plays a role in the lives of many people around the world and so it should not be a surprise that digital social networks have developed over time. Digital social networks (DSN) are systems that allow individuals to both create new connections and identify and document already existing social connections. Digital social networks, such as Facebook and MySpace, are key technological tools in the bridging of offline and online social networks (Ellison, Steinfield & Lampe, 2007).

### **1.2.3 Facebook**

Today, there are still many different digital social networks available world-wide, but the most popular and commonly used network is Facebook with an estimated 750 million unique monthly visitors (eBizMBA, 2012). Facebook reports that in December 2011 they had an estimated 845 million active users, of which 483 million were active every day (Facebook.com, 2011).

All DSN's have common characteristics in that the 'friendships' and 'social connections' that individuals have can be formalised. A key differentiation that Facebook has over its rivals is its focus on the formalisation of social relationships that have been initiated in the offline space. This design focus restricts its ability to be used in the creation of new relationships via the online space (Dwyer, Hiltz & Passerini, 2007).

Facebook has not been without its share of controversies. The data that users place on the site is the primary source of the value associated with Facebook and so how that data is collected, stored, shared and sold presents challenges in relation to what is and is not private, who owns that data and for what purpose it can be used (Jones and Soltren, 2005). Facebook is not alone in its success with the rapid growth in the uptake and usage of alternative systems such as Google+, Twitter, Pinterest and region specific sites such as Renren and Qzone in China (Knight, 2012) beginning to challenge Facebook's market dominance.

### **1.2.4 The Education of International Students in Australia**

University education in Australia aims on educating Australian students, however after the opening up of the tertiary education sector in the 1980s there has also been a strong focus on attracting international students to undertake their study here as well (Bessant, 1996). It was this time which was the start of a broader push to attract greater numbers of students from outside of the country, saw a steady growth in the number of students who come from overseas to study for their University degrees (Chowdhury, 2012). Australia now competes internationally for international students, as education is a billion dollar industry that now constitutes Australia's third largest export market (Arambelewa & Hall, 2006; Farnsworth, 2005; Mazzarol & Soutar, 2008). An estimated 28.3% of University students studying in Australia come from overseas countries, the highest percentage anywhere in the world (OECD, 2007; Commonwealth of Australia, 2009). This makes international students a substantial part of the tertiary education landscape in Australia and the income generated has become a key source of funding for the tertiary education sector; a reliance that could cause issues in the future should the international student landscape change.

### **1.2.5 Sources of Support for International Students**

While universities do offer a range of support programs to assist international students in adjusting to study in Australia (Ong & Ramia, 2009; Love & Arkoudis, 2004), these programs have had limited effectiveness (Abdullah, 2011; Hughes, 2010; Sackers, Secomb & Hulett, 2008). Instead, international students will tend to search for sources of support outside the University structure (Abdullah, 2011). The sources of this support tend to be friends, family and members of similar cultural groups (Campbell, 2004; Misra, Crist & Burant, 2003). Those students who are able to create social connections and seek assistance appear to be better able to perform well in their studies and live successfully in Australia (Abdullah, 2011; Russell, Rosenthal & Thomson, 2010; Ang & Liamputtong, 2008). It would appear that while Universities are aware of the importance of student support, international students are turning to their own support networks in order to cope with the stresses and aspects of overseas study in Australia (Ong & Ramia, 2009; Love & Arkoudis, 2004).

These social connections formed outside the direction of Universities are important in helping to overcome the difficulties commonly associated with cultural adaptability and being geographically separated from family and friends back in their home countries (Campbell, 2004; Misra, Crist & Burant, 2003). In fact, it is common for international students to seek out and create connections with other students with similar cultural and language backgrounds (Misra, Crist & Burant, 2003; Campbell, 2004). Commonalities can help these students feel less isolated, overcome a lack of confidence in their English language ability and be a source of assistance with university workloads (Pearson & Beasley, 1996; Campbell, 2004; Ang & Liamputtong, 2008). One such tool that enables support is that of digital social networks.

### **1.2.6 The Impact of Digital Social Networks on International Students**

Prior research would suggest that the use of digital social networks does have a positive impact on the psychological well-being of users (Ellison, Steinfield & Lampe, 2007/2008) and that technological systems do not necessarily isolate them from their local environment (Selwyn, 2009a). The access and use of technological systems has been shown to have a positive effect on international students who undertake overseas study. Systems such as email, mobile phone, chat programs, VoIP and digital social networks can help to minimise the stresses and anxieties that are associated with being geographically separated from family and friends (Msengi et al, 2011; Poyrazli and Lopez, 2007; Lee, Park and Kim, 2009). Indications are that the importance of digital social networks and other such communication technologies can greatly assist international students in feeling 'closer' to their family and friends back home, and thus less isolated and also allowing them to use their own support networks in order to cope (Abdullah, 2011). There is however only anecdotal

evidence that digital social networks have been used for the express purpose of study (Pollara and Zhu, 2011; Lampe et al, 2011). With the importance of support for international students while studying overseas and the apparent social benefits offered by Facebook, further examination of its role for the locally formed social relationships and interactions of international students is worth investigating in greater detail.

This research investigation is located at the intersections between distinct broader discourses as indicated in Figure 1.1. A greater coverage of the existing body of literature is located in the literature review in Chapter 2.

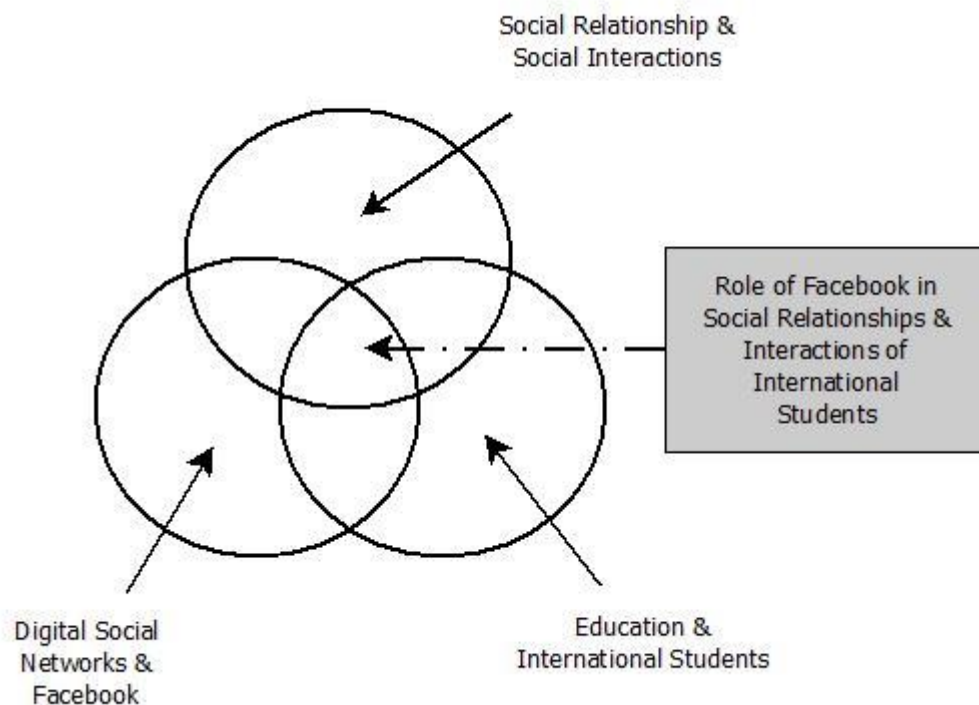


Figure 1.1 Research within Greater Research Context

### 1.3 Research Questions and Objectives

This research examines in greater detail the role that Facebook plays in the social relationships and social interaction of a group of international students while studying in Australia. In this a research social relationship is defined as an acknowledgement of an on-going bond between two individuals that continues over a period of time. A social interaction is a one-off interplay between two individuals at a given point in time. Greater detail in regard to the terms social relationships and social interactions and how they were used in the context of this research can be found in Section 1.4.1.

This study aims to expand on the research previously conducted on Facebook from an educational perspective and to better understand its usage by a geographically co-located group of international students. It focuses on a specific group of potential Facebook using international students and to examine the role of Facebook in their social relationships and social interactions with each other.

The educational environment has been selected as a suitable frame from which to undertake the research. However, it should be noted that the educational experiences and outcomes of the student participants is not the focus of this. This is due to the ethical limitations that have been placed on the research that limits the amount of student educational data permitted to be collected and analysed. More detail regarding the ethical limitations of this research is explained in detail in Section 3.2.1.

To this end the research has the following aims:

1. To explore the use of Facebook within a class of geographically co-located international students;
2. To place Facebook into context regarding the international students' social relationships and social interactions with each other;
3. To determine the role that geographic co-location plays in the choice to use Facebook;
4. To better understand how Facebook is used to assist and support international students while studying abroad in Australia; and
5. To determine the usefulness of Facebook in the support and interaction activities of University educational institutions.

The following are the research questions and objectives that were identified before undertaking this research.

Q1. How does Facebook Support the Social Interactions Amongst International Students?

- Ob1. To determine how interactions amongst a group of international students are undertaken
- Ob2. To determine the factors that influence interactions between international students
- Ob3. To determine the role of Facebook in the interactions between international students

Q2. What is the Role of Facebook in the Formation and Maintenance of Social Relationships Amongst International Students?

- Ob4. To determine what social relationships exist between a group of international students
- Ob5. To determine the characteristics influencing the formation of the social relationships between international students
- Ob6. To identify how the social relationships between international students are maintained
- Ob7. To determine who uses Facebook and how the overall use of Facebook changed over time

## **1.4 Research Approach**

The methodology employed for this research used a subjective ontology and an interpretivist epistemology. The research strategy used a class of 52 international students who had come to study within the University of Tasmania's Foundation Studies Program (FSP) course. The research was undertaken over a 15 month time period which included the time in which research participants were studying as well as four months after completion of their study. The FSP course was a 32-week University preparation course that is designed to prepare international students for study at University. At the successful completion of the program, students obtain entry into the undergraduate program at the University of Tasmania or similar tertiary educational institution within Australia. The FSP course ran from March 2010 to November 2010 and was composed of two 16-week semesters with a two week break in between. The program had students from 13 different countries studying together in a range of subjects taught specifically for the FSP course.

The research design used two different approaches to obtain data from the research participants. The first consisted of three surveys undertaken at the beginning, mid-way through and four months after the FSP course. The second approach was the use of semi-structured interviews approximately six months after the FSP had concluded.

The data was analysed using three different approaches.

1. The survey data was analysed in two ways.
  - a. The first analysis approach was the use descriptive statistics to create a series of tables and charts that generated an understanding of the research participant group.

- b. The second using social network analysis to create a series of diagrams indicating the social relationships between the research participants over the 15 month time frame of the study.
2. The semi-structured interview data was analysed using thematic coding to create a series of key themes relating to the participants' social connections and use of Facebook. Finally the results from the three analysis techniques were interpreted for meaning and then discussed in relation to the available literature.

### **1.4.1 Key Terminology**

The following key terminology is used throughout this research thesis. These are presented here to clarify their use and to prevent confusion around their different applications and understandings.

#### **Digital Social Networks**

The term digital social network(s) (DSN) is used to refer to technology based social network systems that allow interaction between individuals to take place via technological based means. The technological based systems included in this terminology are social focused systems such as Facebook; direct interaction systems such as Skype and MSN; and more traditional technology based modes of interaction such as mobile phone and SMS. These are all systems that allow some form of formalisation of new or existing social connections between individuals.

Past research in this area commonly used the term 'social network sites' (SNS) or 'online networking site' (ONS) to refer to web based services that allow users to create an online profile by which to formalise their social connections and interact with other individuals (boyd & Ellison, 2007). However this definition was considered to lack the broad inclusive definition that this research required in order to better cover the wider range of social based interaction modes used for interaction. The term SNS focuses on online sites such as Facebook, MySpace, Mixi and Renren while the term DSN includes a broader range of interaction modes such mobile phone and email.

#### **Social Connection / Social Interaction / Social Relationship**

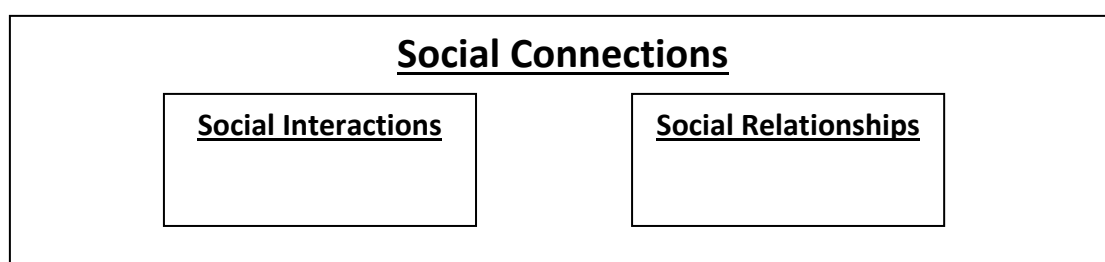
The terms used to define the social aspects that human beings have with one another are broad and can differ in definition. Terms such as inter-personal relationships, reciprocity, social interactions and social connections are broadly used amongst a range social theories such as sociology (Giddens, 2006); social psychology (Aronson, Wilson & Akert, 2010); and social relationship theory (Berscheild & Peplau, 1983).

The social connections that exist between humans are highly complex. Human beings are naturally social (Berscheild & Peplau, 1983) and this drives their need to interact

and form relationships with others. This drive is influenced by a large number of factors such as the social context (Milardo & Wellman, 1992) and the situational factors at play (Kelley et al, 1983). Relationships formed also vary in the level of strength and recognition by those involved (Vangelisti & Perlman, 2006). A more complete coverage of the complex nature of social connections is covered in Section 2.3.3.2 of the Literature Review.

In order to clarify and keep a level of consistency, specific terms have been selected and used in this research. The selection and use of the three specific terms identified below in Figure 1.2 are included as a way to simplify the complexity and to keep a consistent understanding of them throughout the research thesis.

This allowed the researcher to identify the different social elements that existed between the research participants: their relationships with each other and their interactions with each other. Therefore the terms of social connection, social relationship and social interaction were used.



**Figure 1.2 Social Connections / Social Interactions / Social Relationships**

This research looked to examine the social aspects of the participant group and as such needed an overarching term to identify the social aspects. The term 'social connection' in this research is broadly used as an encompassing term to include both the social relationships and social interactions between two or more individuals. For the purpose of this research study, a social connection is recognised as varying from a one-off interaction to an ongoing relationship.

The term 'social interaction' to which this research refers is one component of a social connection. It is a one-off interplay between two people on a one-on-one basis or as part of a larger group. The interplay exists at one point in time and once that interplay has ended then the interaction is finished. However interactions may or may not reoccur at a later point in time. Social interactions can be both 'active' requiring active participation by those involved, such as via a face-to-face conversation, or 'passive' in that only one person initiates and directly partakes in the interaction, such as browsing another person's Facebook profile.



The term 'social relationship' in this research is another component of a social connection. It represents an ongoing acknowledgement of a bond between two people that is continuous over some period of time. The relationship exists even when no social interaction is occurring. However social relationships can end and be re-formed in the future. Social relationships are formed via social interactions and it is the social interactions that are important in maintaining a social relationship.

## **1.5 Research Contributions**

This research provides the following theoretical, methodological and substantive contributions to the body of existing knowledge.

At the substantive level this research contributes a detailed case study on the role of Facebook amongst a small geographically co-located class of international students. It highlights that the social connections of international students are complex and that despite its high popularity, the role of Facebook may not be as important as first thought. Importantly, it reveals that the choice of Facebook does not reflect any inherent loyalty and as such it is likely to be substituted readily to accommodate changing social relationships and interaction needs. This case study suggests that the popularity and wide usage of Facebook is not an indication of its importance in the social relationships and interactions of international students as it lacks the ability to allow interactions of a more intimate nature. What is also suggested is that Facebook's importance to social relationships is dependent on the strength of the relationship.

At the methodological level, this research combined multiple data collection and data analysis techniques together as an innovative approach to overcoming the methodological limitations inherent in single method approaches when examining the complex nature of social connections. The use of this method allows greater insight into the influence of specific social connections and the role of Facebook in the communicative behaviours of international students. This approach allows a broader understanding of the social relationships and social interactions of a geographically co-located participant group.

At the theoretical level, this research has produced models that illustrate the connections that exist between social relationships, social interactions and the use of Facebook. These models illustrate how the changing nature of social connections in terms of strength interacts with convenience, location, time and the need for a communicative response. The complex inter-relationship between international students, the factors influencing their interactions and the choice of mode by which to interact are key concerns in research investigating this area.

## **1.6 Overview of the Thesis**

This section provides a brief overview of the major chapters of this research thesis.

### **1.6.1 Chapter Two– Literature Review**

This chapter provides an overview of the literature related to this research. The chapter has three sections. Section one examines education in Australia and focuses on the importance of international students and their need for support while undertaking study in Australia. Section two covers the role that technological systems play in social relationships and social interactions; and the third section covers digital social networks with a focus on the previous research covering Facebook.

### **1.6.2 Chapter Three – Methodology**

This chapter covers the methodological approach that was used for this research. A class of international students studying in the University of Tasmania’s Foundation Studies Program was examined. The methodology consists of two data collection techniques of a survey instrument undertaken over three time points across a 15 month period and a series of semi-structured interviews created based on the results of the survey and undertaken after the completion of the course.

### **1.6.3 Chapter Four – Research Analysis**

This chapter presents the results from the analysis of the survey and semi-structured interview data collection techniques. The data collected was analysed using three different analysis techniques: descriptive statistics; social network analysis; and thematic coding. The descriptive statistics allowed the researcher to understand the general characteristics and behaviours of the research participants; the social network analysis allowed a graphical representation of the social relationships of the research participants; and the semi-structured interviews allowed greater detail regarding the social interactions and behaviours between the research participants.

### **1.6.4 Chapter Five – Interpretation and Discussion**

This chapter presents the researcher’s interpretation of the results obtained from the data analysis chapter and then discusses these results from the perspective of the existing body of literature. This chapter examines the results in relation to the formation, maintenance and recognition of the social relationships of the international student participant group as well as the factors that influence their social interactions

with each other. Finally it interprets and discusses the results in relation to the role of Facebook on the social connections of the research participant group.

### **1.6.5 Chapter Six – Research Findings**

This chapter presents the findings that were obtained from the research. It presents and details each of the key findings obtained and then re-states and directly answers the research questions. The findings present a series of models broadly covering the social relationships and social interactions of the research participant group. The chapter then specifically places Facebook into context with these outcomes.

### **1.6.6 Chapter Seven - Conclusions and Future Work**

This final chapter concludes the research by summarising the results that have been obtained from this research. It explicitly states the contributions that have been made and the limitations that were present whilst the research was being undertaken. Finally, this chapter proposes areas for future research that may be able to expand on the research further.

## **1.7 Chapter Reflection**

This chapter provides background information that underpins the research. It states the research questions and objectives that were identified; briefly describes the approach that was used; and the contributions that were made to the theory and practice relating to the use of Facebook and other digital social networks in education. It identified that international students face challenges when studying overseas and that social support is a key aspect in overcoming them. Technology based modes of interaction such as Facebook offer potential ways for international students to form and maintain social relationships as well as socially interacting with others they are studying with. Overall the need for greater examination of the role of Facebook for geographically co-located international students needed to be examined in greater detail.

# Chapter Two

# Literature

# Review

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## **2 Chapter Two – Literature Review**

### **2.1 Introduction**

This chapter provides a review of the core literature that was identified and examined as part of this research. It provides a description of the key theme areas. Most specifically this chapter covers University education in Australia in relation to the importance of international students; theory in relation to communication, interaction & the formation of social relationships between people; the history and development of digital social networks and finally specifics in relation to the development and use of Facebook.

This chapter is divided into the following sections:

- Section 2.2 covers the role of education in Australia and the importance of international students. It also identifies the importance of support for international students when studying overseas away from their family and friends. Despite the need for support, universities often find it difficult to effectively provide this;
- Section 2.3 examines the research and theories in relation to the social relationships, social interactions and communication between individuals. There is a focus on relationship strength and the role of social network on the social connections of the individuals involved;
- Section 2.4 reviews the existing body of literature on the development and use of digital social networks. This section then specifically identifies key aspects in relation to Facebook including its usage within the educational environment; and
- Section 2.5 provides a summary reflection of this chapter.

### **2.2 Education**

Education is a general term used to describe the process by which individuals develop skills and abilities through experiences that affect how they think, feel or act (Dewey, 1944). Education is important for the social and economic development of individuals and countries (Shaffer & Wright, 2010; IIASA, 2008) and thus education is seen as a key human right as indicated in Article 26 of The Universal Declaration of Human Rights (UN, 2012). Education is important however there is no guarantee of the quality of the education or the outcomes obtained from being educated as these are influenced by many factors including socio-economic status, quality of teachers, individual behaviour, family structures and language ability (Sammons, West & Hind 1997). While there is an understanding of the importance of education, outcomes are influenced by many factors

and thus this area, known as sociology of education, is one in which theoretical discussions has taken place.

Sociology of education theories relate to how educational environments and the experiences of each individual relate to the educational outcomes (Marshall, 1998). Like other areas of study, sociology of education has a number of theoretical perspectives with some of the key areas being political arithmetic and its relation to social inequity (Halsey et al, 1980; Glass, 1954; Hogben, 1938); structural functionalism and the belief that the role of education is to socialise the next generation and promote social stability (Bessant & Watts, 2002; Giddens, 1984); and conflict theory that identifies the different social groups that exist and that have a range of different priorities and aspirations (Furze & Healy, 1997; Harker, 1990). These theories make it clear that there is a strong link between education and the social structures that underpin it. Thus, in undertaking research in an educational environment, the social aspects of that environment should also be taken into account.

### **2.2.1 Tertiary Education in Australia**

The export of tertiary education to international students is a significant area that relies heavily on the attractiveness of Australia as an overseas study destination. It is a complicated area that has undergone significant changes over the last century, of which international students have become increasingly important. Tertiary education in Australia dates back to the 1850's with the establishment of the University of Sydney in 1851 and the University of Melbourne in (AEN, 2011). For most of its early history, tertiary education was closed to most Australians with only 6% of adults over twenty years of age having a degree before the 1980s (Rosen, 1975). This however has changed dramatically when today's figures are compared. In 1945 there were approximately 10,000 students studying at University however now there are closer to 900,000 students pursuing a university education (Cranston et al, 2010; Rosen, 1975). This was recognition by the Australian government on the importance of education to the population and the country as a whole.

Before 1945, teaching was the sole priority of universities in Australia (Hughes, 2008) however this has changed. Now, both teaching and research are the streams pursued by universities (Bessant, 1996). This move into research was seen as an important step in making Australian universities competitive with other overseas institutions in both global recognition and attracting international students to study within Australia. Universities are not only places where current knowledge is taught but also institutions where new knowledge and understanding is created.

Tertiary education is open to all Australian residents and is based on the principles of democratic equality, social efficiency and social mobility (Cranston et al, 2010). That is, a

university education is open to everyone; benefits Australian society; and the skills taught can be used in a wide range of areas. However, access to university requires evidence of sufficient ability, such as that achieved via a score obtained from studying in high school years 11 and 12 or for older Australians, evidence of sufficient experience (Cardak & Ryan, 2009). Students are also required to pay for their education through university fees, however Government support is available via the Higher Education Loan Program (HELP) and a level of subsidisation of university places. Despite the importance of education it is still an area of economic and financial concern as it is a relatively expensive area of investment.

Both federal and state governments are responsible for primary and secondary education in Australia (Cranston et al, 2010; Hughes, 2008) however tertiary education is primarily a federal concern with money coming from a mixture of federal funding and fees obtained from students (Barcan, 1995). The university system is based on economic rationalisation and the benefits that university studies are able to provide to the rest of Australia (Cranston et al, 2010, Leigh, 2008; Bessant, 1996) and Tertiary education in Australia is also competitive, with education providers ranking against each other in a range of different areas including academic results, research activities and student satisfaction (Bessant, 1996). Universities have to compete against each other in order to attract students, much as in how companies fight for business in a competitive environment (Bessant, 1996).

Education is an expensive service to provide, and while still partially Government funded, economic rationalisation has led to universities having to develop alternative streams of income with which to support their activities. A primary source of income now comes from international students. International students have become an essential part of tertiary education in Australia to the extent that they are now an integral source of income. In order for Australian Universities to continue to be an attractive option for future international students, it is essential that they have a positive experience while studying. The following sections provide insight into the importance of international students to Australian Universities.

### **2.2.2 The Importance of International Students to Australian Universities**

The higher education sector in Australia educates Australian students however there is also a focus on attracting international students to undertake study here as well (Bessant, 1996). The opening up of the education sector in Australia saw a steady growth in the number of students who come from overseas to study for their University degrees (Chowdhury, 2012). International students are a billion dollar industry which constitutes Australia's third largest export market (Mazzarol & Soutar, 2008; Arambelewa & Hall, 2006; Farnsworth, 2005). In fact an estimated 28.3% of University students studying in Australia come from overseas, the highest percentage anywhere in the world

(Commonwealth of Australia, 2009; OECD, 2007). This makes international students a substantial part of the tertiary education landscape in Australia.

For Australia, the majority of international students who study here come from east and south Asian regions (Harman, 2004) and this has been a consistent source of new students. New markets in the Middle East are quickly becoming a growth area (DFAT, 2010). The main factors that are considered by international students before choosing a destination such as Australia are the perceptions of the value of the degree, the perception of the environment, future immigration possibilities and the financial ability to do so (Yao & Bai, 2008; Farnsworth, 2005; Harman, 2004; Simon, 2002; Kemp, Madden & Simpson, 1998). In this regard Australian universities must not only compete with each other for Australian students but must also compete with overseas universities for a piece of the lucrative international student market.

This rise in the number of international students studying in Australia has had enormous benefits in: the fees they pay to study (Michael, Armstrong & King, 2003; Dockery, Thorpe & Haselhurst, 1999); the economic benefits to other sectors of the economy, such as tourism (Son, 2003); and international relations (Harman, 2004, Smyth, 1995).

In fact, the financial benefit that is derived from international students has become an essential part of university funding across all campuses (Dobson & Holtta, 2001). The reliance on this source of funding has seen great effort made to ensure that Australia remains an attractive destination for foreign students. The media attention that resulted from the attacks on Indian students in 2009 saw intense political pressure placed on Australia with the Prime Minister and Foreign Minister making visits to India to reassure the Indian political leaders that Australia was a safe country in which Indian students can study (Das, 2010; Edwards, 2010; Wade, 2010). This shows recognition at a national level of the important contribution that international students make to not only universities in Australia but also the whole Australian economy.

However, in recent years the number of international students choosing Australia as a place to undertake tertiary education has dropped. This has been for a range of different reasons with the two most prominent being the current state of the high Australian dollar and the difficulty in getting a student visa (Collins, 2011). The Australian dollar which in 2010/2011 exceeded parity with the US dollar meant that Australia became one of the most expensive countries in which to study, especially in comparison to other western study destinations such as the United States (Sainsbury, 2012). When the costs associated with studying a 3-year degree at a University are considered, it can be seen that the exchange rate is a major influencing factor and this change has now made other countries such as the United States a much more attractive destination (Woodward, 2012). The ability to get a student visa can also be problematic (Narushima, 2011), especially with the restrictions and limits that are applied to them. These restrictions,



such as fluctuating English language requirements and requiring upfront fees for the entire duration of study, are often not as severe as in other competing countries such as Canada and the UK. There would appear to be a contradiction in some regard to the importance and benefits that international students bring versus the restrictions that are placed on potential applicants.

There is debate and mixed opinion on the effect that international students have on Australia. The economic and cultural benefits obtained from hosting international students are numerous however there are negative opinions in relation to this high number. These concerns stem from perceptions that the importance of international students may be detracting from the quality of the education of domestic students. Foreign students are also often perceived as a customer or commodity in which their satisfaction and educational outcomes are more important than that of domestic students (Koehne, 2005; Creedy, Johnson & Valenzuela, 2003, Poole, 2001).

While international students are important to Australian Universities and they come to study in the same courses as Australian students, there are important differences between both groups. The key difference is the type, nature and importance of the support that international students require while studying overseas. Studying in a foreign country brings additional stresses and difficulties that need to be addressed through the available support structures.

### **2.2.3 Australian Students vs. International Students**

Students studying tertiary education in Australia undertake the same units and course no matter their country of origin. The only difference in study options are the English language programs that are open to international students. However, from a broader group perspective there are some key differences between Australian and international students.

The first key difference is a difference of culture. Most international students who come to Australia for study often find it difficult to identify with local culture and to express their own culture to Australians (Walker, Redmond & Morris, 2010; Arambewela & Hall, 2009). These differences can make it difficult to relate to others and to understand cultural norms. All students who study at the university level will experience difficulties in their studies however the culture and understanding of cultural issues can exacerbate the normal difficulties students face and therefore have a greater influence on international students (Ong & Ramia, 2009; Hughes, 2005).

One specific area of cultural difficulty is the nature of the educational environment in Australia. Universities in Australia encourage and require a certain amount of student independence in their learning – expecting students to study, ask for help, go to lectures, and submit assignments on time without explicit direction. However, international

students can struggle with this as this is not the approach to learning in many other countries, specifically the educational approaches in the Asian region (Rodan, 2008; Pearson & Beasley, 1996). The educational environment in Asia is based around doing specifically what is asked for by the teacher; the teacher is always right (Lun, 2010; Wong, 2004). This leads to the need to spend a lot of time orientating students from overseas to the specific expectations of learning in Australia (Hughes, 2010; Sherry, Thomas & Chui, 2010).

Another key difference between Australian and international students are the motivations for studying at university. For Australians, studying at university is the next natural step after the conclusion of their high school education and is one path to preparing to find employment however for international students the reasons and motivations can vary (Shepherd, 2008). The value of an overseas degree from a Western country is looked upon favourably in many countries overseas and so is the experience in Western culture and ability to speak and use the English language (Harman, 2004; Kemp, Madden & Simpson, 1998). The importance of getting a degree from an English speaking country can be the sole motivation for many students, as it can be an advantage once a student returns to their home country (Storch & Hill, 2008; Dobson & Holtta, 2001). Overseas students also benefit from their study in Australia as the reputation of the degree is an advantage. Maintaining the quality perception of an Australian obtained tertiary degree is fundamental to the future of Australia as an attractive location in which to obtain a degree.

Future opportunities are a common overall theme of why studying overseas is an attractive prospect. The desire to live and work in Australia can be the outcome that many international students strive for. Australia is seen as a high paying country with many more opportunities and a better way of life in comparison to other places (Davies, 2010). In fact a recent survey found that between 65%-84% of students intended to apply for permanent residency once their degree was completed (Davies, 2010; Jackling, 2007). Therefore it is not only the degree which is attractive for international students but also the perception of the geographic and economic characteristics of Australia.

With the high reliance that the Australian tertiary education sector has on international students, supporting them effectively is essential yet Universities seem to have struggled with this. As prior research indicates, traditional approaches that work with domestic students are not as effective with international students (Abdullah, 2011; Hughes, 2010; Sackers, Secomb & Hulett, 2008). Given that support for international students is important for academic outcomes, questions remain regarding how best to provide this support and ensure that Australia and the educational experience had by international students is a positive.

### **2.2.4 International Student Support**

Universities do offer a range of support programs to assist international students in adjusting to study in Australia (Ong & Ramia, 2009; Love & Arkoudis, 2004). Programs such as University orientation, study support and English assistance are essential support services for international students however as indicated in Ong and Ramia (2009), often these programs have had limited effectiveness as they often focus purely on academic needs. Other than academic needs, international students have a wide range of needs from health care, legal services, physical safety, employment and accommodation (Pellic, 2012). In relation to these broader social and educational needs, it has been difficult for Universities to directly support the broader social support needs of international students who can often come to an educational environment in which they have little direct family and friend support. It is the divide between international students and Australian universities that can be a cause of the difficulties with new environments, approaches to learning and language ability being the cause of these barriers (Abdullah, 2011; Sackers, Secomb & Hulett, 2008)

At present international students will often seek out their own sources of support outside of the University structure (Abdullah, 2011), such as friends, family and members of similar cultural groups (Campbell, 2004; Misra, Crist & Burant, 2003) as these sources are more familiar and better understood due to similarities in language, cultural norms and availability. Those students who are able to create social connections and seek assistance appear to be better able to perform well in their studies and live successfully in foreign countries like Australia (Abdullah, 2011; Russell, Rosenthal & Thomson, 2010; Ang & Liamputtong, 2008). It is these social connections that can assist international students, not just with their study but more importantly with the pressures of being in a foreign country away from the usual support networks offered by family and friends (Ong & Ramia, 2009; Love & Arkoudis, 2004). Commonalities can help these students to feel less isolated from family and friends back home, overcome their lack of confidence in their English language ability and to find assistance with university workloads (Ang & Liamputtong, 2008; Campbell, 2004; Pearson & Beasley, 1996).

These social connections are important in helping to overcome the difficulties that can be experienced by international students when studying away from family and friends. These difficulties are commonly associated with cultural adaptability (Campbell, 2004; Misra, Crist & Burant, 2003). For example, the associated norms around how students interact with teachers can differ from culture to culture. Australian universities could be considered much more casual in their approach to student-teacher interactions which can be difficult for international students to understand when there has been a much more formal approach in their past interactions. This can exacerbate student difficulties if they do not feel comfortable actively seeking assistance and initiating contact with

teaching staff. In these situations, international students will often prefer to seek help from their own support networks.

It is known that international students seek out this social support however it cannot be assumed all international students will be able to create social connections with others and therefore the more assistance they can receive in promoting these connections, the better. The ability for an individual to form social connections with others in their environment is dependent on a range of psychological, sociological, physiological, emotional, cultural and temporal factors (Berscheid, 2010). Thus, the question of how Universities can better support these students is a real concern. It would appear that international students are active in looking for support while studying in overseas locations therefore a better understanding of this may lead to improvements in how they can be further supported in the future.

International students who come to study in Australia are seeking a positive and rewarding experience and it is this experience that can be valuable in attracting future international students to choose Australia as their place of study (Harman, 2004; Michael, Armstrong & King, 2003; Dobson & Holtta, 2001; Dockery, Thorpe & Haselhurst, 1999; Smyth, 1995). However there appears to be a key question that does not appear to have been addressed. That is whether the approach of international students seeking their own support networks is a better approach than Universities attempting to be directly involved; a process that has been difficult for Universities. Knowing this, the question for Universities to consider is whether or not they should focus primarily on meeting the educational needs of international students or instead encourage and promote social connection formation in the knowledge that this approach may be more effective.

## **2.3 Social Relationships, Interactions and Communication**

The previous section identified the importance of international students to the education system in Australia and that in order for international students to succeed in their studies they need to be supported. This support often comes from their family and friends back in their home countries and the social connections and relationships they form with others students. These connections are seen as being an important source of social support (Campbell, 2004; Misra, Crist & Burant, 2003). These social connections fall into the area of study that examines groups and how the individuals within interact with each other which is associated with the field of Sociology. This section will examine some of the key theories that directly relate to the research participant group and will help to identify the expected characteristics that are at play in terms of their social relationships and social interactions.

### **2.3.1 Social Psychology**

In examining the social connections between individuals within a group, one area of past research that needs to be examined is that of social psychology. The social connections that exist within a group involve a number of individual connections between two individuals and it is social psychology that attempts to explain the influencing factors that impact the nature of these relationships. Social psychology is a discipline related to sociology, however there is a narrower focus geared towards the individual (Aronson, Wilson & Akert, 2010). Social psychology borrows from the field of psychology to introduce a psychological component to the actions of individuals and how they relate to the social groups in which they belong. Sociology focuses on investigating actions at the group level, whereas social psychology lowers the focus to each individual within the group (Aronson, Wilson & Akert, 2010).

A key component of social psychology is the idea of social influence which is the effect that the presence and actions of other individuals have on the actions of a single individual (Aronson, Wilson & Akert, 2010). Social influence refers to the way individuals will change and modify their behaviour due to the presence, either real or imagined, of other people (Rashotte, 2009). When examining a group of individuals who interact together, such as those selected for this research study, examining, it is expected that aspects of social influence will be observed as the individual members of that group learn to exist and interact together in a common environment.

The study of social psychology also plays a role in the study of multicultural groups of which the participant group is an example. When examining groups that are culturally diverse, it is important to recognise the effect this has on the group members and how they interact with each other. A key concept in multicultural groups is that of ethnocentrism. This is the preference for individuals to stay with others who have similar cultural aspects to their own and to judge other individuals from that perspective (Giddens, 2009; Hinchcliff-Pelias & Greer, 2004) as it is communication and interaction that is most affected by cultural differences (Xu & Davidhizar, 2005). In examining a multicultural group of participants it would be expected that both the one-to-one connections and the cultural influences would be at play.

### **2.3.2 Social Relationship Theory**

Social relationship theory explains why and how interpersonal relationships are formed between individuals (Berscheid & Peplau, 1983). This research examines a group of students who are coming together for the first time and developing their relationships with each other in the social context of a common course of study. While this theory has expanded to include the examination of interaction with and between non-human objects and environments, the main focus is the human element. Human beings are social creatures who naturally seek out and form relationships with other humans

(Berscheid & Peplau, 1983; Milardo, Johnson & Huston, 1983). These relationships are dynamic and range in strength and intimacy from a passing acquaintance to a long term friendship to marriage. The study of these relationships in areas such as sociology, psychology, anthropology and relationship science attempt explain the nature of these relationships (Berscheid & Peplau, 1983).

Social relationships are complicated areas of study that involve a range of factors that all play an influencing role such as: psychological, sociological, physiological, emotional, cultural and temporal factors (Berscheid, 2010). Given that it is in human nature to form social connections it is well understood that having meaningful social connections is important for overall happiness and life satisfaction (Mehl et al, 2010). Individuals often find meaning and purpose in life via the social relationships and interactions with others (Mehl et al 2010; Berscheid 1994). It is thought that social relationships are dyadic in that they involve two people and are formed via a chain of events and conditions that work together to allow the connections to form and be maintained (Kelley et al, 1983). Social penetration theory supports this as it proposes that the formation of a relationship needs to time develop as it will start out as non-intimate before developing further (Griffen, 2006). The formation of a social relationship is not a guarantee as Social Exchange Theory sees the formation of a relationship as being dependant on the benefits that can be derived in comparison to the costs associated (Emerson, 1976). Relationships are about interdependence and the benefit that is derived from the existing connection (Kelley, et al, 1983) though from the research it is not always clear what that benefit is, as benefits can differ depending on the person and the situation.

There are a range of broadly defined factors that appear to influence the social connections and relationships of human beings. The factors include opportunities to form connections; gender and cultural factors that relate to similarities; need for social support; the interpersonal skills and abilities of each individual; existing connections that can be promoters of new connections; and stage and lifestyle factors (Dykstra, 1990; Fischer & Oliner, 1983). These factors can act as both promoters and barriers depending on the situation (Fischer & Oliner, 1983). All these factors are dynamic and can and do change over time and it would be expected that as they change so too would the social relationships and connections that are formed (Simpson, 1987). Examining the social factors at play in connection formation, research indicates that the 'social context' plays an important role, though more research is needed in this area (Milardo & Wellman, 1992).

This complexity has made it difficult for a clear picture to be developed and researched in relation to how social connections are formed, change over time and eventually end (Glenn, 1990). This causes social relationships to be examined from different perspectives that depend on the factors trying to be understood. Though it is understood that social relationships are influenced by a broad range of factors, this

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research limits the scope to a particular group of subjects inhabiting a specific environment.

### **2.3.3 Social Relationships**

The research participant group that is being investigated in their research study are being examined from the perspective of their social connections with each other. A key aspect of their social connections is the specific relationships that exist, therefore it is important to review what is meant by a relationship and most importantly how the strength of these social connections can differ. Relationship is a broad term that is used to describe a connection that exists between individuals that form the basis for social support and are closely associated with happiness and physical and mental well-being (Berscheid, 1994). Study of relationships is a broad and diverse area with a wide range of aspects such as perceptions, dyadic relationships, negative aspects and empathy and close relationship support (Vangelisti & Perlman, 2006). Broadly, relationships can be categorised into two types: family relationships; and other relationships (Kelley et al, 2002). This categorisation would appear to be used as the nature and type of social relationship that exist, between those who are not related by a family connection, are diverse and difficult to easily identify. Social identity theory links the formation of social relationships with others as having an influence of the individuals 'self-identity' (Turner & Oakes, 1986). Essentially, individuals practically develop their own identity based on the groups to which they belong. This is further supported by Fiske, Haslam and Fiske (1991)'s and Berscheid and Peplau (1983)'s writings that identify that similarities between individuals promote group formation while the inter-dependence that develops maintains those connections.

This research is looking at a class of international students who have the opportunity to form social relationships with each other. The educational environment and common motivation to complete their course of study presents them with a range of possible factor that could encourage the formation of social connections with each other.

#### **2.3.3.1 What is a 'Friend'?**

While there can be many differing types of relationships, this research examined a class of international students studying together for the first time. Therefore their relationships are broadly going to consist of 'friendships' which are different from other forms of relationship such as family or work based. The term 'friend' is a commonly used term in a wide range of aspects including everything from describing someone that we spend a lot of time with; to someone who we know; to someone who we add to our Facebook 'friends' list. The understanding and meaning of 'friend' often changes from one person to the next (Allan, 1989) so when it comes to investigating the concept of a

social connection and understanding what a 'friend' is, defining this is an important first step.

In trying to understand what is meant by a friend, examining the characteristics of 'friendship' is a useful place to start. Friendship is described by Duck (1991) as an essential part of human life that provides a range of benefits for those involved. These aspects are around gaining a sense of belonging and support from the friendship; this being an important element to the self-worth we have about ourselves. There are, of course, external benefits in that a friendship is indicated by a level of caring, support, loyalty and priority (Duck, 1991). These elements are what hold the friendship together as a voluntary commitment to another person or persons (Wright, 1984) and are what gives the friendship 'value' to those involved (La Follette, 1996). However, there are also views that question to what extent friendships are voluntary given the influence of social, cultural, geographic and ethnic factors in friendship formation (Allan, 1989).

Not all friendships are the same, and the value that a friendship has depends heavily on those involved and the type of friendship that exists. La Follette (1996) discusses Aristotle's three categories of relationship in regard to friendships. Aristotle lists these types of friendship as: friendships of utility; pleasure; and complete friendships. The categories relate to the benefit and reasons behind the friendship existing. The first two are specific to the benefit with friendships of utility based around the situation and environment, and friendships of pleasure based around the enjoyment obtained from the relationship. The final category is that of a complete friendship that meets the criteria of the first two types but is stronger and more rewarding due to the similarities and aspects in common that exist between those involved.

Even though there is no universally accepted single definition of the term 'friendship', the more modern views tend to focus the understanding of friendship being between two unique individuals linked together based on the benefit obtained and the common characteristics of those involved (Bell and Coleman, 1999). It is often the situation and environment along with the common characteristics between two people that influence the creation of friendship.

All this discussion on friendship does not answer the fundamental question of exactly what a 'friend' is. This is problematic as the natural way that relationships form leads to difficulties in identifying what constitutes a friendship and how this can differ from person to person (Allan, 1989). This is not helped by the term friend being used as a generic label to describe a social connection. The friend label is used by Facebook as a broad term to identify those who have been added to their social connection list.

Overall, terms 'friend' and 'friendship' are generally understood in society but that if a more solid definition is needed then this understanding becomes problematic with it



possible that one person may consider someone a friend but the other person may not think the same way. This research will need to grapple with the term ‘friend’ and how best to classify the research participants in such a way so as to avoid grouping everyone together as friends. In addition, the subjective nature of friendship may also make it difficult for the participants themselves to fully understand who is and is not a friend as well as the difference in strength of those connections.

#### **2.3.3.2 Connection Strength**

In exploring the social relationships or friendships of group of individuals, it is important to have an approach to classifying the different types of friendships that exist and how the variation in strength can be determined. Social network theory identifies the connection strength that exists between members of a group. These are called ‘ties’ and can range in strength and are generally classified on a scale from ‘strong’ to ‘weak’ (Wellman & Berkowitz, 1997). The strength of a tie is related to a range of factors such as the type of connection, level of interaction and the duration of the relationship. While it is recognised that tie strength is a scale, Granovetter (1973) and Haythornthwaite (2005) identify them into two primary categories: ‘the strength of strong ties’ and ‘the strength of weak ties’.

The ‘strength of strong ties’ states that the social relationship is relatively strong with more intimate forms of communication being used for interaction and the similarities in the characteristics of the individuals involved (Haythornthwaite, 2005). The ‘strength of weak ties’ however is characterised by the differences between the individuals and how these weak relationships offer advantages due to the difference in experiences and thinking (Granovetter, 1973). The table below gives a concise overview of the differences between these tie types.

<b><u>Weak Ties</u></b>	<b><u>Strong Ties</u></b>
Acquaintances, casual contacts, others	Friends, close friends, co-workers
Tend to be unlike each other	Tend to be like each other
Travel in different social circles	Travel in same social circles
	Similar experience, information & resources
<b><i>Resources and Information Exchanges</i></b>	<b><i>Resources and Information Exchanges</i></b>
Infrequent, primarily instrumental	Frequent and multiple types
Share few types of information or support	High level of intimacy
Low motivation to share	Reciprocity in exchanges
<b><i>Strength of Weak Ties</i></b>	<b><i>Strength of Strong Ties</i></b>
Experience, information come from different social spheres	High motivation to share

Table 2.1 Weak vs. Strong Ties (Haythornthwaite, 2005)

Even though these classifications of tie strength make sense, they do appear to simplify what is a complicated and ill-defined aspect of the social connections that exist between individuals. Tie strength is described as being on a scale with weak ties at one end and strong ties at the other however there is a lot of middle ground that is not classified. This lack of a classification may lead to accuracy issues when using it as a broad indication of relationship strength as each individual in a group would have differing strengths of connection with another and having only two categories becomes much more problematic.

### 2.3.4 Social Networks

A social network is an approach to understanding the social relationships and connections that exist between individuals in a group. Social network theory differs from the others by having its emphasis on the importance of the exchanges that occur between people who are members of the group (Wasserman & Faust, 1994). This is important as the educational environment in which the research participants are part of

is the primary driver for them being together with study being the primary motivator. Social network theory incorporates elements of social psychology and mathematics in order to identify and capture the interactions of the members of a social group and how they relate to the groups they belong to as a whole (Kilduff & Tsai, 2003). Social network research has produced a number of theories that explain how individuals form relationships with each other. The three most common theories are: balance; social comparison; and structural role theory.

Balance theory identifies that when people form groups they wish to give as much as they receive (in terms of the level of reciprocity). In addition, this theory identifies that in larger groups there exist smaller, tighter sub-groups, known as cliques, where individuals are more closely connected to each other (Cartwright & Harary, 1956); Social comparison theory identifies that people will form social relationships with other people who have similar characteristics (Festinger, 1954). Structural role theory states that people are influenced to act and behave in particular ways by those around them be they members of a close group or a larger group (like a society) (Kilduff & Tsai, 2003). These theories identify the complexity that is involved in examining and trying to understand the relationships that exist within social groups. The nature of the environment in which the participants are studying, would be expected to have characteristics that fit within all three of the briefly covered theories. It is important that the characteristics of Balance theory, Social Comparison theory and Structural Role theory are recognized as they are likely to be at play within the participant group.

There are other possible theories that are associated with the nature of interaction between individuals and groups; most specifically are the research fields associated with Activity Theory and Actor Network Theory. Activity theory examines the complex nature of human interactions and how they are impacted by the social situation (Bedney & Meister, 1997) while Actor Network Theory examines the factors that influence the formation of networks (Latour, 1987). These theories do influence groups however the research methodology selected does not examine the participants at the group level instead it examines them at the individual level and as such the theories covered throughout Section 2.3 are considered more appropriate.

### **2.3.5 Communication**

Communication is a term that is commonly used to describe the process by which interactions occur from one party to another. However, the broad meaning and understanding of the term also raises difficulties in accurately defining what is meant by 'communication'. In Dwyer (1999, p4)'s business communication text defines communication as:

“...any behaviour, verbal or non-verbal, that is perceived by another.”

This definition is a simple description of the complex nature of the communication process that consists of more than just the verbal aspects and includes other elements such as body language, facial expressions and cultural understandings from the perspective of examining a group of participants with not just diverse English abilities but also different cultural understandings that taint the way communication is understood.

Meerlo (1967, p131) describes 'communication' as:

“...a cluster of transactional functions whereby a state of body and mind is conveyed from one person to another, and responses evoked.”

This definition is interesting as, unlike Dwyer's definition, it seems to include the 'state of body and mind' and how this is transmitted and communicated to others as opposed to how it is 'perceived' by others. These definitions show that communication is about 'conveying' and 'perceiving' from one person to another both intentionally and unintentionally.

### **2.3.5.1 Communication Types and Processes**

Communication between individuals occurs in a variety of different ways and has many factors that influence those interactions. Taylor, Rosegrant and Meyer (1986) identify four types of communication that occur: intrapersonal, interpersonal, public and mass communication modes. Each of these approaches have different modes and are suited to different types of situations. The public and mass communication approaches are most effective when a message needs to be communicated to a large number of receivers while the intrapersonal communication occurs when a person needs to communicate with others regarding ideas, thoughts, feelings and plans. For this research the concept of interpersonal communication is most relevant as this is the approach that describes how one person communicates and interacts with another person.

Communication involves sending a message to another person via a particular channel. The sending of this message is impacted by the environment in which the message is sent. While the brief description above may appear complex, it is something that human beings do every day and can do with a lot of speed and efficiency. However, it is not a perfect process, as barriers are always present and need to be dealt with if communication is to continue to occur.

The rapid change in technological innovation and the new modes by which individuals are able to interact and communicate with each other present some challenges to the traditional model of communication. The innovations now allow communication that is increasingly intimate and meaningful with the reciprocal and co-operative elements playing a much greater role (Riva & Galimberti, 1998). It is the developments in how technological systems now allows intimate modes of interaction to occur, with systems

such as Skype allowing users to talk face-to-face to each other using both video and audio despite geographic separation. Geographic separation is but one of a range of traditional barriers to successful communication.

There are a number of barriers to communication that are identified into three main categories: environmental barriers, communication ability and personal characteristics (O'Halloran, Worrall & Hickson, 2011). These characteristics indicate that there is the possibility of communication barriers and difficulties dependent on not just both parties who are attempting to communicate but also other environmental factors that happen to be in the way. The specific barriers influencing communication include physical, perceptual, emotional, cultural, language, gender and/or interpersonal (Smith, 2010). While these barriers are varied, in the communication between groups of culturally diverse individuals, it is culture and language that are prominent factors.

### **2.3.5.2 Cultural and Language Barriers to Communication**

Cultural and language factors in communication are not specifically tied to the interaction between those who speak different primary languages or come from different countries. These factors more broadly relate to the different experiences that each individual brings to the communication process (Liddicoat, et al, 2003; Windschuttle & Elliott, 1999) whether they are educational or experiential. When we communicate, the backgrounds we bring to the event determine the meaning we attribute to the message we receive or how we perceive the situation overall (Samovar & Porter, 1976). This is especially true when it comes to the interaction between people from different countries. Cathcart and Cathcart (1976) use the example of the cultural differences that exist between the United States and Japan to illustrate this point. Japanese people learn from a young age that it is important to 'fit-in' to society as they are part of the society; while in the US, children learn from a young age that they are unique individuals who must forge their own way through life. These contradictory positions easily indicate that communication and interaction between people from the US and Japan can have 'issues'. Yoji (2009) in his book 'Ikaesanai Nihonjin' identifies the many cultural differences that exist between the Japanese and Western approaches to doing business and how these differences can cause real problems with interactions and communication.

Communication between individuals from different cultures can create cultural misunderstandings due to the differences in communication styles and the cultural factors that determine what is communicated directly and what is communicated indirectly (Xu & Davidhizar, 2005). The differences stem from the amount of context that is transmitted and expected to be understood by the other party. The communication contexts tend to be high-context or low-context, the difference being the extent to which intentions are made clear (Gudykunst, Ting-Toomey & Chua, 1988). Japan is considered

a high-context culture while the USA and Australia are considered to be low-context cultures.

The study of language is diverse field of investigation but it can be simply defined as a mode of communication or a way for people to transmit information to one another (Maynard & Perakyla, 2003). It is not only language that plays a role in communication as information is also conveyed via the process and approach to communicating. For example, a face-to-face conversation between two individuals does not only include language, it also includes a great deal of non-verbal signals such as tone of voice, facial expression, posture, gestures, personal space and eye contact (Chitakornkijasil, 2010; Mead, 1934). The extent of these differences is commonly associated with the cultural similarities and differences between the parties communicating (Chitakornkijasil, 2010).

Language itself directly influences communication. In order to effectively communicate with others a common language must be used (Lee, 2003). While it is possible to learn a second language this is not a guarantee of interaction success as linguistics work together with social rules (Maynard & Perakyla, 2003). It is not just which words and phrases are used which are important in communication but also the way they are used, and in what social circumstances (Sanders, 2005). The cultural aspects of language usage are just as important to learn as in group situations it is often difficult for all members of the group to understand the rules that are in place and be able to utilise them effectively (Whorf, 1956).

In the area of education, language ability, or more accurately, deficiency, is the primary factor in influencing the success of an international students study (Abel, 2002; Wimberley, McCloud & Flinn, 1992). This is due to the importance of language in the learning process both in terms of understanding the material that is taught and also in the interactions with others. It is these elements that are an important part of successful study (Hinchcliff-Pelias & Greer, 2004). Hence language ability is one of the key components that are assessed by Universities in Australia before admitting international students to study (UTAS, 2012).

Overall, the literature indicates that both culture and language are essential elements in allowing successful communication to occur (Liddicoat, et al, 2003). An understanding of how to use a common language with others is more than just about successful knowledge of that language, it is also about the cultural factors that are present and that both are important to understand in interactions. While culture and language barriers are not unique to individuals from different countries, they do play a role in successfully learning to use the language and the surrounding cultural elements are essential for successful communication.

### **2.3.6 Computer Mediated Communication and the Role of the Internet**

Computer Mediated Communication (CMC) is the study of the role that technological systems play in the interactions and communicative behaviour of individuals (McQuail, 2005) and it looks to expand the understanding beyond just their use as a means to communicate (Riva & Galimberti, 1998). The study of this area is difficult one to accurately define because of continual technological development leading to the understanding and definitions of CMC continuing to change over time (Castells, 2004; Nie & Erbring, 2000). Interaction and communication using technological systems has now become much more commonplace and is greatly influenced by the users who shape the mode type and how those modes are adopted for interaction (Hunt, Atkin & Krishnan, 2012). Of the recent technological developments, the Internet is one such innovation that has greatly influenced the way in which individual people interact (McKenna & Bargh, 1998).

There have been a range of potential issues that have been identified and discussed in relation to the role that the Internet has had on human communication and interaction. The issues include the associated information overload that can occur due to having greater access to information (Chen, Pederson & Murphy, 2011); how to harness new forms of interaction to interaction with others (Vrocharidou & Efthymiou, 2012); a loss of real-world social ties and contacts (Nie & Erbring, 2000); the anonymity associated with being online having dis-individualisational effects (Aronson, Wilson & Akert, 2010); and the use of computer mediated communication in educational environments (Ranney & Troop-Gordon, 2012).

The effective use of computer technology has in the past been dependent on demographic and economic factors (Sutton, 1991) but the continual integration of ICT into modern life means that students have grown up with technological systems and thus it becomes a regular part of their lives. However those students who are older or come from less developed countries are more likely to have lower overall ICT skill (Volman et al, 2004). As time goes on and ICT continues to become integrated into everyday life then ICT and past barriers will be less of an issue.

The benefits that are derived from the Internet as a form of communication relate to the ability to connect people together. These connections can bring together those with similar interests (Ufaeva, 2013; Rheingold, 2003); allow contact to be maintain with family and friends (Qu, Sia & Hui, 2013; LaRose et al, 2001); and overcome barriers to communication such as geography, time restrictions, the importance of physical appearance and the pace of interaction (Haythornthwaite, 2002; McKenna & Bargh, 2000).

Another factor that influences the use of the Internet and other computer based means of communication is the strength of the connections that exist. Individuals with a strong

relationship between them will tend to use a wider range of technology based modes for their interactions (Haythornthwaite, 2005).

There is evidence that some of the negatives from Internet communication and interaction could be due to its relatively rapid development and integration into social interaction. The study by Kraut et al (1998), on the loneliness and depression that resulted from Internet interaction, was based on an examination of individuals who had been using the Internet for less than two years and recent studies by Ranney and Troop-Gordon (2012) and Qu, Sia and Hui (2013) give strong indications of the positive impact of computer mediated communication. This situation was one in which a technological change had been introduced and therefore it should not have been expected that there would be short-term resistance to this change (Carlopio, 1998). This opens up the question of whether these negatives are likely to dissipate as the integration of the Internet (and other associated technologies) develops. History has shown that a greater range of technology based modes of interaction has now become more accepted due to developments in video chat, mobile devices, wireless Internet and the development of improved technologies.

## **2.4 Facebook and Digital Social Networks**

We now live in an information intensive world (Castells, 1996). The flow and spread of information is as important as the flow of goods and services, and with the development of the Internet and web technologies, new ways of spreading and sharing information, and socially interacting have emerged. There is a very strong link that exists between the technological and social aspects of the lives of many people (Selwyn, 2012). An aspect of this information sharing is the explosion in the popularity of digital social networks such as Facebook & MySpace and how they allow the interaction and strengthening of social ties between individuals and groups (boyd & Ellison, 2008) that can now occur without the traditional limitations of geographic distance and requirement for face-to-face contact (Beal & Strauss, 2008). In 2011, social networking was the most popular online activity ahead of retail and communication according to a report by ComScore (Digital Strategy Consulting, 2012).

### **2.4.1 Digital Social Networking**

Digital social networks (DSN) or social networking sites (SNS) are defined by boyd and Ellison (2008):

“...as web-based services that allows individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with



whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system.”

This definition essentially covers the theoretical, technical and social aspects of these systems. Of most relevance to this research are the ‘social’ aspects of these systems and the following is possibly a more accurate definition of this social aspect. Boyd and Ellison (2008) go on to say that:

“The digital sharing and exchange of information, attitudes, insights & experiences through a variety of mediums (such as text, photos, chat, games) and supporting a variety of modes of communication (such as message posting, real-time chat, email and media sharing)”

DSN’s allow individuals to identify and document pre-existing social connections and, those such as Facebook and MySpace, are key technological tools in the bridging of offline and online social networks (Ellison, Steinfield & Lampe, 2007). In other words, users utilise sites such as Facebook as a way to build and strengthen their existing offline relationships and not to create new relationships with strangers. These relationships are strengthened through the many activities that DSN’s allow. Using Facebook as an example, users can: post both public and private messages; upload pictures; join common interest groups; comment on their or others’ status; text-chat; and even create applications such as quizzes to share. The wide range of activities allow different types of interactions that can be matched to the needs of the sites’ users and allow a digital representation of a user’s current and historical social network connections (Williams & Merten, 2009).

#### **2.4.2 The Development of Digital Social Networks**

Technological systems play a role in the lives of many, so it should not be a surprise that digital social networks have developed due to advances in information technology. The understanding of these networks and the issues and problems that have emerged over time are of importance when examining how digital social network are used today and will be used in the future.

From the first emails and set-up of Bulletin Board Services (BBS) in the 1970’s, technological improvement has resulted in new developments aimed at allowing interactions to occur (Dunn, 2012; Online Schools, 2012). Digital social networks have emerged from the development of the approach of promoting a much more personalised experience in the online space for users (Dunn, 2012).

The first digital social network that allowed users to list and show friend connections was SixDegrees.com that launched in 1997 (boyd & Ellison, 2008). Unlike previous sites that have similar functionality, this site’s primary purpose was the formalising of social

connections by listing friends and allowing interaction with them. The idea of profiles being created online is not a new phenomenon in itself, however previous sites that were profile based have more specific purposes, such as dating profiles, connecting with past school friends and direct communication (boyd & Ellison, 2008).

The first site launched with the aim of allowing friends and friends of friends to find and connect with each other was Friendster.com in 2002 (Nickson, 2009). This site was designed in a similar way to SixDegrees.com by focusing on the examination of existing connections in order to recommend others that are part of similar social networks. Initially, Friendster.com was highly successful however this success led a growth in popularity that the site was unprepared to handle (boyd, 2006b). The success problems faced by Friendster, such as fake users, issues with privacy and limiting of functionality ultimately led to a decrease in popularity and finally closure (Nickson, 2009). Friendster is an example in the digital social network space of a good idea being difficult to support and approach. Friendster achieved a high level of popularity however the company and site were overwhelmed and were unable to deal with the accessibility, usability, privacy and behavioural challenges that occurred (Chafkin, 2007; Rivlin, 2006).

The next milestone in terms of digital social network development was the launching of MySpace.com in 2003. Like Friendster.com, MySpace.com enjoyed rapid growth and success largely attributed to the age group that it attracted (16-21 year olds) and the greater flexibility it gave to its users (Fishkin, 2006). MySpace.com allowed customisation of each user's presence; varying levels of privacy & anonymity; and an ability to share personal details with others. Unfortunately, MySpace.com also experienced troubles and its popularity today is dramatically lower than at its peak. The troubles included useability issues, perception issues, a too strong emphasis on advertising revenue and technological changes (James, 2009).

There have been successes and failures in the digital social network space and what seems to be clear is that achieving a sustainable business model while also being feasible enough to meet future expectations and perceptions is difficult to achieve. When MySpace.com was bought by News Limited in 2005 for \$560 million, many thought that is was a good deal for News Limited. However, while it is difficult to accurately value MySpace.com today most agree it is well below the \$560 million that was paid (Blodget, 2010).

Digital social networking has continued to develop with each new service having either having differing or broader appeal. For example, the second most popular digital social networking platform is Twitter with an estimated 250,000,000 unique monthly visitors (eBizMBA, 2012). Twitter allows users to 'follow' other users and see their 'tweets', messages of a maximum 240 characters (Twitter.com, 2012). Social elements also form

key elements of other online services that are popular such as YouTube.com and Vimeo.com (video sharing); Flickr.com (photo sharing); and LastFM (online radio).

Today, there are still many different digital social networks available world-wide but the most popular and commonly used network is Facebook with an estimated 750,000,000 unique monthly visitors (eBizMBA, 2012). Facebook reports they had an estimated 845 million active users, of which 483 million were active every day, in December 2011 (Facebook.com). While the visitor numbers to Facebook, as well as the revenue and future forecasts, look very positive, they have had their share of negative publicity and incidents indicated the cracks in the business model and other issues that it will face in the future. These incidents have included public outcry over privacy and data mining approaches (Ortutay, 2012); and inappropriate usage (Today Show, 2010). Facebook is discussed in further detail later in the chapter in Section 2.4.5.

What the history of digital social networks demonstrates is that the social network space continues to evolve with once popular systems having changes of fortune and experiencing difficulties due to their continual developing nature. As popular as systems such as Friendster and MySpace were during their peak, digital social network investigation is needed as there is still areas that are not well understood.

### **2.4.3 Theoretical Approaches to Investigating Digital Social Networks**

Digital social networks are essentially large social systems that involve the use of computing systems to allow connections and interaction to occur between individuals who share a connection (Wilson et al, 2009). Technological developments have allowed human beings to interact in new ways; from the introduction of printed text in China in 305BC; the invention of the electric telegraph by Joseph Henry in 1831; the telephone by Alexander Graham Bell in 1870; the transmission of radio signals in 1901; television in 1925; the concept of a 'cell phone' in 1947; the first communication satellite in 1963; the Internet precursor ARPANET in 1969; and fibre optics in 1991 (Bellis, 2012) as some examples. Technological systems affect the way that human beings interact with each other and thus theoretical approaches to research have emerged. This research is examining one particular form of technological development, that of the digital social network. Digital social networks are social systems designed to formalise the relationships between individuals and allow them to maintain these relationships and stay in contact with each other.

The social nature of digital social networks has resulted in there being a large number of theories that have been used to investigate this phenomenon. The broadest theories are drawn from the fields of sociology and social theory that relate to the study of human activity (Comte, 2005). Sociology stems from the historical examination of societal change by Emile Durkheim (Simpson, 1993); societal class struggle by Karl Marx (Marx &

Engels, 1890); and the interpretivist approach to societal research by Max Weber (Weber, et al, 1991). The area of sociology is very broad covering a range of topics from culture to media studies to political structures to religion (Livesey, 2005). In relation to theoretical investigation into digital social networks, there are a number of key sociological theories that seek to explain the phenomena. The theories that are relevant to this research have been identified and discussed in Section 2.3 Social Relationships, Interactions and Communication.

This research is investigating social groups from the perspective of the individuals (also known as 'actors') that are involved as interactions between groups of individuals, and cannot be explained by examining one individual and must be approached from a broader group perspective (Livesey, 2005). Some examples of these approaches are: social group theory and its approach to investigating the similar identities and social interactions of individuals (Sherif & Sherif, 1956); social exchange theory that examines the social exchanges between parties (Homans, 1958); actor network theory that sees social groups as dynamic and constantly re-engineering themselves (Latour, 2005); group decision support systems that focus on the use of technological systems to allow exchanges and decisions to be made between groups (Laudon & Laudon, 2007); Communities of Practice that examines the interactions between a group that share a similar situation (Lave & Wenger, 1991); and social network analysis which is the study of social structure by examining the nodes and the connections that exist between them (Wasserman & Faust, 1994). These different theoretical approaches to investigating digital social networks show the complexity that exists in any examination of social structures (Strogatz, 2001). Of the theories identified above, it is social network analysis that provides a suitable theoretical approach for undertaking research into the use of Facebook by international students. As the participant group being investigated is a small self-contained group (see Section 3.5.1 in the Methodology chapter), social network analysis theory provides an approach that allows the individual connections between the participants to be identified and graphically represented. This approach creates a visual representation of a group from the individual perspectives of each of the individuals involved and suits the aims of the research to investigate these social relationships.

From the social psychology and social relationship theories discussed in Section 2.3.1 and Section 2.3.2, the factors that motivate interactions and the formation of social relationships between individuals is difficult to determine from examining digital social networks alone. It is this lack of context therefore that indicates the importance of using a broader approach to data collection beyond just that data located in a digital social network. These considerations have influenced the methodology design as discussed in the methodology in Section 3.5 Research Design and Section 3.6 Tools and Techniques.

#### **2.4.4 Issues and Concerns Regarding Digital Social Networks**

There has been a lot of research undertaken in regard to digital social networks. While much research has been founded on either Facebook or MySpace as the digital social network site under observation (Debatin, et al, 2009; Selwyn, 2009b; Thelwall, 2008; Ellison, Steinfield & Lampe, 2007), the current body of research has tended to focus on several key areas.

##### **2.4.4.1 Privacy and Information Sharing**

One of the key areas that have been investigated in the research is that of privacy and information sharing. Digital social networks are based around the notion of connecting individuals together and these connections will inevitably lead to information being disclosed to members of that network (Lewis, Kaufman, & Christakis 2008; Jones & Soltren, 2005). The nature of Facebook as an information sharing source and whether or not that information is public, private or both, is at the heart of the privacy and sharing issue (de Zwart, et al, 2010). It is the disclosure of information that is of particular interest with research indicating that while users of social network sites such as Facebook are aware of the privacy issues, these concerns do not appear to have a major impact on the general use of Facebook (Debatin et al, 2009; Acquisti & Gross, 2006). However research seems to indicate that the negative consequences of having this personal information made public and/or used incorrectly are not well understood or fully considered (Debatin et al, 2009; Bonneau, Anderson & Danezis, 2009; Jones & Soltren, 2005). This would indicate that privacy is still of concern.

There are three key privacy threats originating from digital social networks: users sharing too much personal information; the DSN not adequately protecting privacy; and third parties actively seeking out and using data from such sites (Jones and Soltren, 2005). These three factors are supported by other research indicating that the trust requirement for users of digital social networks tends to be lower while online compared to physical and local interactions (Dwyer, Hiltz and Passerini, 2007). This leads to the likelihood of greater disclosure of personal information. The use of data by third parties is part of the privacy debate (Bonneau, Anderson and Danezis, 2009) and is the reason for the high value that has been placed on Facebook (New York Times, 2012). The final factor regarding a lack of privacy protection has changed in recent times, due mostly to this specific criticism being strongly echoed by the online community resulting in the introduction of improved privacy controls for users of digital social networks (Sengupta, 2011; Bonneau, Anderson and Danezis, 2009). However, as with the case of Facebook, there are still concerns and confusion around these privacy controls (Lewis, Kaufman & Christakis, 2008). The nature of digital social networks and the opportunities they offer for users to share and interact with each other means that privacy is likely to remain a concern, as it is the data that holds the most value for the operators and supporters of DSN.

#### **2.4.4.2 Identity Formation, Online 'Self' and the Online/Offline**

Another common issue in the research on digital social networks is the role they play in the formation of identity and the online 'self' (Stutzman, 2006). Individuals, teenagers especially, develop their social identity by interacting with the world around them (Kushin & Kitchener, 2009; Nyler & Near, 2007). The online environment now forms a significant part of these interactions and as such the influence on individual development has been investigated. As part of this research, digital social networks have specifically been examined.

Research on identity formation has recognised that the online social interactions of teenagers play an important role in their social development as the online environment is another space that allows personal expression to take place (Thelwall, 2008; boyd, 2007). The reason for this specific examination of online/offline identity is the idea that there is a difference in the online and offline personas that individuals exhibit. However the research on this is mixed with a range of findings. An early study by Al-Saggaf (2004) indicated that Saudi users of the Internet greatly improved their 'open-mindedness' from their use but that this same use did have negative influences on their offline family relationships. The common online phenomena of 'trolling' and 'flaming', purposefully causing negative emotion and conflict online, along with other negative online behaviours has been thought to be a response to the anonymity that the online environment offers by giving users a feeling that they are 'invisible' to a great extent while online (Suler, 2004).

However, much of the research that has examined the online and offline social interactions using digital social networks has found that often the online and offline are not different from one another (Grasmuck, Martin & Zhao, 2009; Selwyn, 2008; Ryan, 2008), in fact the research seems to indicate that the online identity of an individual is an extension of the offline identity that helps to reinforce existing social connections. While there can be some differences in how individuals act in the online space, these differences are generally not as dramatic as common belief would indicate (Beer, 2008).

#### **2.4.4.3 Social Capital and Social Support**

The literature on digital social networks also examines their use and influence on social capital and social support. Social capital is the concept that a person's friends and family are an important asset that can be called on when needed (Woolcock & Narayan, 2000). As digital social networks allow users to connect and interact with others, the idea that they may help to develop social capital and be an outlet to offer and receive social support is a valid one (Yoder & Stutzman, 2011). The research would suggest that the use of digital social networks does have a positive impact on the psychological well-being of users (Ellison, Steinfield & Lampe, 2007/2008) and that technological system use is not necessarily isolating for them (Selwyn, 2009a). The positive impact of technological

systems has been shown to have an effect on international students who undertake overseas study and are away from family and friends (Msengi et al, 2011; Lee, Park & Kim, 2009; Poyrazli & Lopez, 2007). The research indicates that the importance of digital social networks and other such communication technologies can greatly assist international students in feeling 'closer' to their family and friends back home and thus less isolated, allowing them to use their own support networks in order to cope (Abdullah, 2011). However, other research has indicated that this well-being from digital social networks is related more to the direct interaction and communication with others and that general usage without such interaction has little impact on well-being (Burke, Marlow & Lento, 2010).

What is interesting from a review of the current research is the role of the use of digital social networks and the development of social capital. Ellison, Steinfield and Lampe (2006) support the role that digital social networks play in reinforcing offline connections but much of their research suggests that usage does not in fact lead to greater social capital or a higher number of 'offline' friends (Valenzuela, Park & Kee 2009; Tong, Van Der Heide & Langwell, 2008). It can however influence the perception of others in that users may seem more popular when they have a lot of online friends, even though this may not be an accurate reflection of the offline reality (Valenzuela, Park & Kee 2009; Tong, Van Der Heide & Langwell, 2008).

#### **2.4.4.4 Educational Context**

Education has been a well-covered area in relation to research on digital social networks, as social connections and interactions are a strong part of educational culture (Hargadon, 2009). While a majority of studies have used the educational environment as merely a location in which to undertake research, some studies have focused on the use of digital social networks directly for educational purposes. There is only incidental evidence that digital social networks, in this case Facebook, were used for the express purpose of study (Pollara & Zhu, 2011; Lampe et al, 2011). Overall it was found that educational usage is only a small part of the usual everyday usage as it offers a convenient mode in which to undertake the interaction needed for study (Grosbeck, Bran & Tiru, 2011; Selwyn, 2009b).

Studies that have focused on teachers and their use of digital social networks for interaction with students have produced mixed results. Some research has shown that positive relationships and classroom attitudes can occur due to teacher student interaction over digital social networks (Sturgeon and Walker, 2009; Mazer, Murphy & Simonds, 2007) however other research has shown no relationship (Hewitt & Forte, 2006). It would appear from the research that using digital social networks to build rapport with students maybe a worthwhile interaction, however the lack of detail regarding the influences of educational policies and appropriate behaviours is something

that needs to be further investigated given the pervasive nature of digital social networks in the educational environment.

Other research in the educational environment investigates the effects of interactions that occur in the online space. It is already known that digital social networks have positive applications for international students studying overseas, as a way to deal with the stresses of study and to get psychological support from family and friends back home (Sherry, Thomas & Chui, 2010; Misra, Crist & Burant, 2003) but there are other benefits such as developing locally formed connections (Ellison, Steinfield & Lampe, 2007) and language practice (Kabilam, Ahmad & Abidin, 2010). Generally, social media is now seen as being part of the overall educational experience of students (Hrastinski & Aghee, 2012).

While a lot of research has been undertaken within the educational environment, little of it seems to have any clear answers in relation to student education and the use of digital social networks. The research shows that students use DSN but exactly how or whether they influence educational outcomes is not yet known.

#### **2.4.5 Facebook**

When it comes to identifying the most popular and widely used digital social network today, most would agree that it is Facebook (Experian, 2012). Facebook is but one of a number of examples of a digital social network that allow individuals to digitally formalise and interact with other members of their social group. Facebook's wide spread usage and popularity has made it the centre of a lot of social science research with the research including categories such as descriptive studies of users, motivations for Facebook usage, presentation of identity, Facebook's role in social interaction and the impact of privacy and information disclosure (Wilson, Gosling & Graham, 2012).

All DSN's have common characteristics in that the 'friendships' and the social relationships that individuals have can be formalised. A key differentiation characteristic of Facebook over its rivals is its focus on the formalisation of social relationships that have been initiated offline as it is restricted in its design around creating new relationships from the online space (Dwyer, Hiltz & Passerini, 2007). McClard and Anderson (2008) characterise Facebook as a predominantly dynamic environment with constantly changing updates. Facebook provides a digital space where individuals, groups and organisation can share content such as messages, photos, videos and links with other members of their network.

While other networks, such as 'Renren' in China are immensely popular in that country (Chen & Haley, 2010), their use outside by Chinese nationals is rare. In certain areas it has been created specifically for use by Chinese due to Chinese Government control of the Internet and other foreign online social network sites.



### **2.4.5.1 Facebook Access and Usage**

Facebook is a social networking site that gives users a wide range of ways in which to share and interact with each other. Sites like Facebook are not universally used by everyone or used in the same way and it is these important differences that are to note when specifically trying to understand how and why DSN sites are used.

In terms of general access, it is the user's experience that is an important influencing factor in determining if, when and how a particular technological system is used (Henderson et al, 2012; Hargittai, 2008). Those who have experience with using Facebook or similar sites before will be much more comfortable with Facebook and its available features. This is also true in terms of technical ability as a factor in the level and type of usage (Lynn & Witte, 2010). It is likely that the familiarity and experience influences overall usage. Hargittai (2008)'s study on the differences between users and non-users of social network sites also indicates that this tends to stay consistent over time. It is these high end experienced social network site users that tend to use the online environment more to communicate with others while those who are less experienced will tend to use other, more traditional modes to interact (Tufekci, 2008). Henderson et al. (2012)'s study on the use of the online social environment Second Life in language learning had some indications that the complexity of the system was a barrier to its usage if users were not adequately introduced and supported during their skill development.

The other factors linked to usage of Facebook are in regard to the considerations and concerns around privacy. There appears to be an existing contradiction in the nature of digital social networks such as Facebook where there are real privacy concerns around what and how information is shared, yet they are designed around promoting the sharing of information, both between users and as the revenue model that uses that information for directed advertising (Stutzman & Kramer-Duffield, 2010). Research indicates that users are aware of the privacy issues surrounding the use of Facebook and the potential to publically share information, however these concerns do not greatly influence use (Debatin et al, 2008; Acquisti & Gross, 2006). Those who use Facebook are aware of the risks that it poses and take them into account when using the site but this does not prevent the actual usage itself.

### **2.4.5.2 Facebook in the Context of Interaction**

One of the differences that exist between Facebook and other forms of communication is that Facebook can be determined to be a 'many-to-many' communicative environment where one or many people share with other people in public posting of messages, photos, videos and web links (McClard & Anderson, 2008). While Facebook has its own one-to-one modes of communication in its messaging and chat features, it has a social focus in its overall design.

Facebook's design of interaction provides opportunities for people to communicate with other Facebook users, providing that those users are part of their 'friends' list. However this communication is much more 'ad-hoc' and the interaction and communication that occurs for the most part is not purposeful (Selwyn, 2007); it is used to keep in contact by seeing what Facebook 'friends' post on their Facebook page and then using that opportunity to interact if desired (Thelwall & Wilkinson, 2010). Facebook is where users with commonality can share and meet (Ploderer et al, 2008) and can assist in the generation of social capital (Yoder & Stutzman, 2011).

Studies have shown that the online environment can actually have a dis-inhibiting effect on the actions of users (Suler, 2004) however this does not seem to be the case with Facebook. Use of Facebook tends to mirror the real-world interactions (Selwyn, 2008; Mazer, Murphy & Simonds, 2011, Grasmuck, Martin & Zhao, 2009) because Facebook has a focus on users presenting their 'real' selves; in that they present their real names, personal information and photo. Users of Facebook tend to interact with others that they have a real-world connection with and that their actions can be directly related back. It is this accountability and connectability with already existing relationships that allows the online and offline behaviour to be similar. Tong et al (2008) points out the 'falseness' of the online environment in comparison to the real world in that the online environment does not operate or influence in the same way as the real world environment and so users of Facebook need to be aware of what they are sharing as in most cases they are sharing with everybody on their 'Friends' list (Cain, 2008; Hewitt & Forte, 2006).

It is also considered that Facebook offers a way to break down some of the barriers to interaction and communication. The barriers that can make it difficult for a user to interact with others such as lack of self-confidence, language ability, existing social norms, and geographic location, can be overcome by utilising a social technology that allows users to interact in a wide range of ways (Sturgeon & Walker, 2009). Facebook can be used as a tool to reinforce the relationships that have been created in the real-world through face-to-face interaction (Nyland & Near, 2007). However, research indicates that users of Facebook prefer to interact and be 'friends' with others who have similar characteristics, such as similar backgrounds (Sender & Oishi, 2009) or social 'tier' as themselves (boyd, 2007).

While there is a strong indication that existing social relationships are supported by Facebook the inverse is not clear; that is, whether or not the use of Facebook influences real-world behaviour. Prior research suggests that the use of Facebook does not have a large influence on getting people involved socially (Valenzuela, Park and Kee, 2008). This would suggest that Facebook is only a support tool for existing social relationships and connections.

### **2.4.5.3 Facebook Use in the Educational Environment**

Past studies into the use of Facebook in an educational environment have been undertaken. This is not unexpected as Facebook usage is highest among students (Tu et al 2011; Cain et al, 2008; Selwyn, 2007). While Facebook allows students to connect and conveniently interact with each other (Zaidieh, 2012; Brady, Holcomb & Smith, 2010) there have been some arguments in regard to the specific academic benefits of using it. While students do appear to be willing to harness Facebook as a tool both directly for educational purposes (Roblyer et al, 2010; Kayri & Cakir, 2010) and as a way to interact and work through conflicts related to their study (Selwyn, 2009b) prior research exists that appears to indicate that it can also have a negative impact on educational performance (Junco, 2011) and be a distracting influence (Wise, Skues & Williams, 2011).

The use of Facebook by an individual depends on their understanding of what Facebook is. This understanding can be different for each individual (Lampre et al, 2011) so while some may see Facebook as having an educational focus in student usage, others may simply see Facebook as a broad social technology. An earlier study by Ellison, Steinfield and Lampe (2006) concluded that there is a relationship between the strength of an individual's social ties and their use of Facebook to create social capital and support those ties.

With the apparent benefits that Facebook offers for users to connect with each other and to collaborate in educational environments, it is not unexpected that many studies have already used the academic environment to investigate its use. The question still remains however as to what specific role Facebook has on the approaches to study and social interaction when studying overseas.

## **2.5 Summary of Literature Review**

This chapter provides an overview of the literature in relation to the three key areas covered by this research. The first section covers education in Australia with a focus on the importance of international students and their need for social support in order to have successful educational outcomes. The second section provides an overview of the role that technological systems play in the social relationships and interactions of human beings. It provides a brief description of key theory in relation to human relationships and interactions and the area of computer mediated communication. The third and final section covers the development of digital social networks and the key issues that have been covered in past research. It concludes with a summary regarding Facebook as a specific digital social network.

An examination of the literature has identified some key areas that present themselves for further examination in this research. First, the clear importance of international

students to Universities in Australia makes them a useful participation co-hort. If Universities in Australia are going to continue to benefit and attract future students from overseas countries then they need to be supported as much as possible so that their experience, whilst in Australia, is productive and positive. It is the social connections between international students that offers a key source of this important support so better understanding these connections can be greatly beneficial. Finally, the popularity of digital social networks, and Facebook specifically, appears to have an influence on the social connections of international students and offers potential benefits if better understood.

# Chapter Three

# Research

# Methodology

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## **3 Chapter Three – Research Methodology**

### **3.1 Introduction**

This chapter describes the methodology that was used in undertaking this research. It covers the philosophical perspective from which the research was undertaken, the research strategy employed, the overall design of the research project, the approach to the collection and analysis of the data, and finally how the interpretation and discussion of the results was undertaken.

- Section 3.2 presents the ethical challenges encountered in undertaking research that uses data obtainable from the online space and specifically from digital social network systems. This section also identifies and discusses the ethical limitations that were placed on this research;
- Section 3.3 describes the philosophical underpinnings of this research which uses a subjective ontology along with a interpretivist epistemology. This approach was deemed to be the most appropriate given the nature of the research dealing with human beings as the source of the data;
- Section 3.4 discusses the research strategy that was employed. The methodological aims are stated along with the details of the location, the research participants selected and the focus on using a single digital social network;
- Section 3.5 discusses the research design. It covers the broad characteristics associated with the undertaking of this research including how the participants were selected, the scope of the research and the location of the research within a course at the University of Tasmania and the focus on Facebook as the selected digital social network. In addition there is brief coverage of the two data collection techniques;
- Section 3.6 describes the specific demographic details of the research participants used in this research. This section also describes in detail the two different data collection approaches used. The first data collection technique used a series of self-reported surveys undertaken at different time points over the duration of the 15 month time period of the research's data collection. The second data collection technique was a series of semi-structured interviews with selected research participants undertaken at the end of the 15 month time period;
- Section 3.7 covers details regarding the data analysis. The survey and semi-structured interviews were analysed using three different methods. The survey data used a descriptive statistical approach that allowed the data to be collated

together; and a social network analysis approach that allowed the creation of diagrams representing the social connections between the participants. The semi-structured interviews were analysed using a thematic coding approach that allowed the themes in those interviews to be extracted;

- Section 3.8 describes the approach to interpreting and discussing the results that were obtained from the analysis of the collected data;
- Section 3.9 identifies and discusses some of the clear limitations that were present in the research and how these were taken into consideration in regards to the aims and design of the research; and
- Section 3.10 concludes the chapter by reflecting and summarising the chapter.

### **3.1.1 Research Aims**

The methodology that is covered in Chapter 3 has been designed to meet the research aims and questions set out in Chapter 1 Section 1.3. For clarity the research aims and research questions are restated below.

This research has the following aims:

1. To explore the use of Facebook within a class of geographically co-located international students;
2. To place Facebook into context regarding the international students' social relationships and social interactions with each other;
3. To determine the role that geographic co-location plays in the choice to use Facebook;
4. To better understand how Facebook is used to assist and support international students while studying abroad in Australia; and
5. To determine the usefulness of Facebook in the support and interaction activities of University educational institutions.

The research is focused around answering and addressing the following research questions and objectives.

How does Facebook Support the Social Interactions Amongst International Students?

- Ob1. To determine how interactions amongst a group of international students are undertaken

- Ob2. To determine the factors that influence interactions between international students
- Ob3. To determine the role of Facebook in the interactions between international students

Q2. What is the Role of Facebook in the Formation and Maintenance of Social Relationships Amongst International Students?

- Ob4. To determine what social relationships exist between a group of international students
- Ob5. To determine the characteristics influencing the formation of the social relationships between international students
- Ob6. To identify how the social relationships between international students are maintained
- Ob7. To determine who uses Facebook and how the overall use of Facebook changed over time

### **3.2 Ethics Approval: Issues and Challenges**

Research that is undertaken in the online space presents a number of challenges for researchers using it as a source of data collection. These challenges need to be considered so as to ensure that ethical standards and protections are adhered to for the safety and security of the research participants. The aim of using ethical approaches to research is to ensure that the potential ‘harm’ to research participants can be minimized, however when the online space is used then this becomes a more complex consideration (Hudson & Bruckman, 2005). The source of this difficulty relates to the nature of the data that exists in the online space and whether or not it can still be considered as ‘public’ in the traditional sense (Nissenbaum, 1998). The online space allows large data sets to be obtained and easy and anonymous observations of behaviour to be undertaken. There is however concern and confusion around the ethical nature of such collections that current ethical policies and procedures are struggling to come to terms with (Bos et al, 2009). The issues of privacy and the ability to re-attribute data from larger data sets have previously caused issues (Fisher et al, 2010; Zimmer, 2010) with the struggle strongly associated with the ‘private lives in a public space’ contention (Davies & Merchant, 2007). Facebook itself appears to struggle with this same conundrum in that there is difficulty in clearing identifying what is public and/or private when it is located online, challenges that can lead to both possible ethical and legal risks (de Zwart et al, 2010). According to Woo (2005), the Facebook policy states that the website itself is available for ‘personal and non-commercial use’ however they have also stated numerous times



that Facebook is a 'public forum'. In addition, Facebook's business model harnesses the personal information of its members for financial gain by selling directed advertising based on the information that is provided. These contradictions and uncertainties are causes for concern. The nature of the research of this investigative study also required the obtaining of ethical approval before it was able to be undertaken. Obtaining this approval created limitations around the methods and types of data that was able to be collected and used.

### **3.2.1 Ethical Restrictions Placed on the Research**

All researchers at the University of Tasmania are required to obtain ethical approval for their research before data collection can be undertaken. This approval was sought and obtained however due to the nature of the research certain ethical restrictions were placed on the project.

The initial desire was to undertake an ethnographic study that involved using a combination of data collection approaches. The approaches would have included direct observations of Facebook activity and classroom interaction and interviews regarding participants' use of Facebook, interactions with others and study behaviours. This approach would have resulted in detailed data regarding the social interactions, social relationships and uses of Facebook by the research participants. However, ethics approval was unable to be obtained for a primarily ethnographic study so a modified approach, that excluded particular types of data collection, was designed.

After applying for ethical approval, the ethics committee believed that the observations of student behaviour, both online and offline, posed a potential risk. The restrictions that were placed on the data collection related directly to the observation of student behaviour. It was stipulated that no observational data relating to student behaviour was able to be collected or used for the research. This included all observations of the interactions between the research participants in the classroom or other such physical space as well as their interactions in the online spaces such as those via Facebook or other such digital social media. This included observations in public online spaces that were open and non-confidential. Although these restrictions on the collection and use of observational data were discussed with the ethics committee and attempts to deal with the stated concerns relating to informed consent, anonymity and public accessibility, the restrictions were kept in place. It should be noted that the ethics committee did informally acknowledge that research in the online space does present ethical issues that are still challenging the policies and processes required for ethics approval.

Due to the imposed restrictions, a modified methodology was submitted and approved. The revised data collection approach used a combination of quantitative

survey data and semi-structured interviews over a 15 month time period. As the researcher had more than 6 years of knowledge and experience in interacting with international students at the University of Tasmania, an interpretivist approach was selected. This approach acknowledges that the experiences and inherent biases of the researcher did play a role in the investigative study and assisted in overcoming the imposed ethical limitations. Details regarding the philosophical beliefs underpinning the research are located in the next section.

### **3.3 Philosophical Perspectives in Research**

When undertaking research it is important that a clear and concise methodology be identified and followed (Rajasker, Philominathan & Chinnathambi, 2006). While the aims of the research of course play a role, so to do the theoretical and philosophical assumptions, the context under while the study is performed and the preferences of the researcher (Trauth, 2001). To this end the first step is to identify the theoretical perspective and assumptions that are underpinning the research.

The philosophical perspective of research relates to how the researcher perceives the world and the data that it contains (Trauth, 2001) and is used as a way to determine through which ‘lens’ the research is undertaken. This ‘lens’ affects the type of data collected; how it is collected; how it is analysed; and the results that are obtained.

The basis of these philosophical assumptions can be characterised into the ‘Ontological’ and ‘Epistemological’ perspectives (Garcia and Quek, 1997; Nissen et al, 1991). This research is using a subjective ontology and an interpretivist epistemology which will be explored further in the following sections.

#### **3.3.1 Ontology**

Ontology is defined in Merriam-Webster dictionary as:

“a particular theory about the nature of being or the kinds of things that have existence.” (Merriam-Webster, 2010).

An ontological perspective is important to consider because it determines how the data collected relates to the world in which the research is undertaken. The theoretical perspective is commonly split up into objective and subjective. An objective view of the world believes that there is only one world and everything in it can be seen in only one way. Research undertaken in an objective way removes the influences and biases of the researcher and views the subject and data as existing together (Orlikowski and Baroudi, 1991).

The subjective approach sees the world as being different depending on who is viewing the world. Research undertaken in a subjective way seeks to identify that the researcher and research participants influence the process and that no one person sees the data in the exact same way. This is commonly the result of as the researcher's experiences, knowledge and personality as being influencing factors that need to be taken into consideration (Orlikowski and Baroudi, 1991).

This research is considered exploratory in nature as it is seeking to explore in more detail the nature of the social connections between international students and the influence that Facebook has on the social relationships and social interactions between them. Exploring phenomena in new ways and forming a better understanding from a new perspective, an exploratory approach is seen as being most suitable (Berg, 2004).

### **3.3.2 Epistemology**

Epistemology is defined by Weber (1997) as the theory relating to how valid knowledge of the world is obtained. While there are variations in the epistemological approaches that can be used in a research study, they can generally be characterized into two broad categories: positivist and post-positivist. The positivist approach is the most traditional being closely associated with the natural sciences that uses approaches such as experiments to develop, test, confirm and reconfirm theories. This approach, as best it can, takes a single view of the world such that to confirm a theory, the results must be re-confirmable when the same method is used (Orlikowski & Baroudi, 1991).

The alternative view is that of the 'post-positivist'. This approach spans many different types of methods such as critical theory, constructivism and Marxism to name a few. These approaches recognize that the researcher and their views and experience; influence the world in which they engage; and that it is impossible to separate the researcher from the research. The most common is the 'interpretivist' approach in which the researcher understands the complex nature of the world that they are investigating and recognises their interpretation of the world, the data, and the outcomes are subjective (Sullivan, 2001).

As this research investigated phenomena very much associated with human beings and their varied values and beliefs, interpretation is the most suitable approach (Darke, et al, 1998). Human interactions are considered to be complex and difficult to capture using the traditional positivist approach as this tends to remove the complex subtleties that exist when human beings interact with one another (Kaplan and Duchon, 1988). This is especially true when examining a smaller group in greater detail compared to the common undertaking of large scale questionnaires. The

purpose of this research is to investigate a smaller group of participants in more detail, therefore an interpretivist epistemology was selected for this research undertaking (Orlikowski and Baroudi, 1991).

This research was undertaken using a subjective ontology along with a interpretivist epistemology as the research intends to better understand the factors the influence behaviour and actions so that more detail on how and why can be obtained. This philosophical beliefs underpinning the research led to the development of the research strategy covered in the next section.

### **3.4 Research Strategy**

This section will discuss the research strategy that was employed in order to undertake this investigation. This research investigated the role that Facebook played within a group of international students and how their use of this digital social network changed over time and impacted on their social relationships and interactions with each other. The methodology employed was exploratory in nature. The approach involved using two different data collection techniques and three approaches to the analysis of the data. In addition the approaches were also evaluated based on their effectiveness for this type of research.

#### **3.4.1 Methodological Aims**

The methodological aims of the research were:

1. To determine the social relationships formed between the research participants before, during and after studying together;
2. To obtain data on the social interactions of the research participants and the modes by which these interactions occurred;
3. To explore the use of technological based means of interaction, with a focus on Facebook, by a group of International students over a period of time to see how the usage changes; and
4. To use a range of methodological techniques to collect and analyse the data in order to obtain a more detailed picture of the social relationships, interactions and technology based modes used by a class of international students.

#### **3.4.2 The Use of a Case Study Approach**

A case study approach to research involves collecting sufficient data about a particular 'case' so as to allow the researcher to understand that case and how/why it works the

way that it does (Berg, 2004; Walsham, 1995; Yin, 1988). The 'case' can be a person, place, social situation, event or group that is bound to a particular time and place. The case study approach examines the selected case(s) over time (Berg, 2004) and uses the resulting understanding that is obtained to answer the research questions. The use of case studies to undertake research in the social field has gained acceptance (Silverman, 1998) and although the outcome is interpretivist in nature, Urquhart (1999) indicates that their use allows theory to be successfully grounded in the collected and analysed data.

Interpretivist research commonly takes the approach to create the theory *after* the data collection has occurred. This is called 'grounding' as the outcomes are driven by the results of the data collection and analysis; all in order to create the theory to explain and answer the research questions (Charmaz, 2003, Strauss & Corbin, 1990). The 'grounding' approach does not dictate how the researcher should collect data, rather it allows a suitable approach to be used to collect the data that is tailored to fit the situation. The final results are subjective in nature and they look to answer the research questions supported by the outcomes that have been obtained.

This research uses a case study approach in the selection of the phenomena that is under review. In this situation a single case study was investigated over the course of a 15 month period. The case consisted of a class of international students that came together to study a foundation preparation program at the University of Tasmania.

### **3.4.3 Qualitative and Quantitative Data Collection**

Data can be broadly classified into two types: quantitative and qualitative (Trochim, 2006). Quantitative data is typically numerical in form while qualitative data is non-numerical. While both data types can be analysed, the nature of the analysis differs with quantitative data being more in its use descriptive while qualitative data requires interpretation to be employed in order for outcomes to be obtained. The type of data is to some extent dependent on the data collection technique that is used with surveys and statistical data sets typically considered quantitative collection techniques while interviews and observations are considered qualitative data collection techniques. This research investigation collected and analysed data that was both quantitative and qualitative in nature. Greater detail on the data collection techniques used in this research is located in Section 3.6.

### **3.4.4 Location of the Research**

The University of Tasmania was the primary data collection site for the research. In order to be able to place a boundary around the selected participants, the Foundation Studies Program (FSP) course was chosen as the source of participants for the study.

This course is the University of Tasmania's 32 week program that is designed to prepare international students for tertiary level study at the University of Tasmania the following year. All of the subject units taught in the program are unique and are only undertaken by FSP students. This isolates the course to a large extent from the rest of the University.

The use of the FSP course allowed the scope of the project to be well defined, as the program had a small number of participants and was relatively socially contained it therefore it formed an ideal social network with which to examine the research questions.

### **3.4.5 The Selected Participant Group**

The primary difficulty in trying to examine how a social technology is used by a group is the diverse nature of the social groups that human beings have (Hinde, 1987). Social groups can include family, friends, work-colleagues and recreation groups. How the members of these social groups interact with one-another is important when examining how technological systems are used to facilitate communication. However the sheer number of social connections that a group of participants may have makes research into this area problematic, as a result many past studies have focused on a range of techniques aimed at analysing large data sets. These past approaches have included methods such as large scale surveys (Ellison, Steinfield & Lampe, 2007; Grosbeck, Bran & Tiru, 2011; Valenzuela, Park & Kee, 2008; Nyland & Near, 2007; Lampe, Ellison & Steinfield, 2006); analysis of network data (Lynn & Witte, 2010; Thelwall & Wilkinson, 2010; Seder & Oishi, 2009, Kushin & Kitchener, 2009); literature reviews (Selwyn, 2009a, Cain, 2008); interviews (Grasmuck, Martin & Zhao, 2010; Wohn et al, 2011, Sturgeon & Walker, 2009); and experiments (Tong et al, 2008; Walther et al, 2008).

These samples give a broad picture but lack the detail that a combination of techniques and a focus on a smaller group can offer. Therefore, this research focused on a much smaller group of participants so they could be examined in more detail

### **3.4.6 Social Technology and Digital Social Networks**

There are a large number of different 'digital social networks' that exist on the Internet and the level of popularity/usage of these networks can vary (Experian, 2012). However, given the location of the research study, the focus on the use of a single social network was deemed most appropriate for the small scale of the study. One factor that stood out as being a key indicator of suitability for a single digital social network is the popularity in the environment in which the research is being undertaken.

Popularity of a digital social network is an important consideration. Due to the nature of these types of networks, people use them as a way to digitally formalise their social relationships, although it should be noted that the criteria users employ to determine who is/is not in their social network is open to personal interpretation (Ellison, Steinfield & Lampe, 2007). Therefore if someone is to use a digital social network on a regular basis then the members of their social group have to be present.

## **3.5 Research Design**

This section will discuss the specifics involved in the research design. The design was guided by the philosophical approach and research theory discussed above.

### **3.5.1 Selection of Group – Entering the Field**

The first step in any research design is the identification and selection of the field in which the study will be conducted. A researcher with an interpretivist philosophical underpinning needs to identify the best way to reach the participants in the field (Flick, 1998) and also to ensure the selected group is appropriate. The quality of the analysis and outcomes are highly dependent on where the data originates (Corbin & Strauss, 2008). Arcury and Quandt (1999) identify that selection of participants needs to be considered especially in situations where collecting data from the entire field is not a possibility.

In undertaking research that examines a group of students, the researcher needed to investigate how the students formed social relationships, how they maintained them, and the influence that social media had on these relationships/interactions. In order to do this, access to a suitable representative group was needed. As previously discussed in Section 2.3.4, the social relationships and interactions of people can be wide ranging and complex and therefore offer challenges around how best to investigate them. This research aimed to investigate a smaller social group in more detail in order to overcome the lack of detail that can be found in broader studies researching larger groups or data sets. To this end, an educational setting was chosen as this environment allowed the selection of a research participant group that was accessible while having an identifiable boundary (King, 2004). The selected site for the study is the University of Tasmania.

In selecting an environment from which to draw participants, The University of Tasmania's English Language Centre (ELC) was chosen. The ELC has a wide range of classes of varying duration and socio-cultural mix. Classes range from small single cultural classes of 4-8 students to broad ranging classes with 20 – 30 students. The researcher's role as a teacher within the ELC allowed them to enter the field and

access a suitable participant group. The Foundation Studies Program (FSP) course was selected as the site for the participant recruitment.

The approach used for this research was to select a contained group of participant students that were studying within the ELC. This offered not only a culturally diverse group of participants but also allowed a complete 'social group' to be selected and examined. As mentioned briefly in Section 3.4.5, the students studying the FSP course are separated from the wider university community due to the isolated nature of the course and thus the environment provided a pre-determined social boundary from which to study the group.

The investigation of social relationships and social interactions can be difficult due to the large number of connections that any one individual can have with other people. Therefore the selection and use of a smaller and relatively self-contained group of research participants allowed them to be examined in detail and their participation in the Foundation Studies Program (FSP) course acted as the boundary for the research.

The research participants themselves were naturally selected through their choice to undertake the FSP course. The researcher had access to the participant group but was not responsible for the demographic make-up of this course. In addition, the participant group could be considered as being a small representative snapshot of the type of international students who study at the University of Tasmania (University of Tasmania, 2013) as well as universities across Australia (Universities Australia, 2013).

Participants were selected using a purposeful sampling approach. A purposeful sampling approach is used to identify and select participants that are suitable in order to meet the aims of the undertaken research (Maxwell, 2005). Since the aims of this research were to examine the role that social media plays in the social interactions and relationships of international students, the selection of a contained class of international students offered an ideal location in which to undertake the broader survey based data collection. As stated in the above paragraph, this sample of a class of international students allowed a boundary to be identified so as to not get lost in the complex nature of their relationships. Further selection of a sub-group of participants for interviewing used a judgment sampling approach where participants were selected based on the analysis of the previous stages of the research, the descriptive statistics and social network analysis approaches (Marshall, 1996). The participants identified for interview were selected to be a representative sub-sample of differing cultural backgrounds, having different relationship types and from different countries.



### **3.5.2 Participant Scope**

When examining social connections that exist between people there are difficulties that arise relating to the complex nature of the social connections that any one individual has; social connections that can include relationships with and interactions between family members, relatives, close friends, work colleagues, social acquaintances and neighbours. These social connections can be spread both temporally and physically and therefore present a number of challenges which are outlined below:

1. The resources and access required to identify and track these connections;
2. How these social connections can be identified and how social interactions are undertaken, for example face-to-face or via a particular technological based means;
3. The dynamic nature of social relationships that change over time;
4. The level of understanding that an individual participant has of their own social interactions and connections;
5. The ethical and privacy issues present in obtaining data concerning social connections and interactions; and
6. The range of methods and technologies used to undertake communication and reinforce these social connections.

This study used international students who had come together to study a foundation course in preparation for further tertiary study. In this kind of environment, where many of the students would not already know most other members of their class groups, there is an important need for students to develop a sense of connection and community with their fellow classmates if they are to be successful (Eberhardt, 2007)

The participant group used for this research was considered to be culturally diverse with the students originally coming from thirteen different countries. Although they are studying in Australia, a majority of the participants come from Asian and Middle-Eastern backgrounds. While western countries tend to focus on 'individualism' as the method for understanding social identities (Dalsgaard, 2008), Asian and Middle-Eastern societies have a greater focus on the 'group' (Hill, 2010).

### **3.5.3 Access to the Research Location**

The data collection site for this research was the University of Tasmania's English Language Centre. Within this program are a number of different courses that are designed around teaching international students. The chosen course, the Foundation

Studies Program, is one that operates from March to November each year. This course offered an environment where students would be studying together for an extended period of time as well as having opportunities to interact with each other outside of class time. As the student participants are relatively isolated from others undertaking other university courses, their fellow classmates offer one of a limited number of opportunities from which to develop social connections.

The researcher was able to obtain access to this research participant group through their work as a teacher within this FSP course. This access presented an opportunity for the researcher to be able to undertake the data collection. Ethical restrictions are discussed previously in Section 3.2.1.

At the time this research study was undertaken, the researcher had taught the 'Computing Skills and Research Management' unit within the Foundation Studies Program for 5 years. This had involved six classes and approximately 175 students who had successfully completed the course.

#### **3.5.3.1 The Foundation Studies Program**

The 'Foundation Studies Program' (FSP) is a 32-week intensive study course offered to International students who wish to study at the University of Tasmania (or other Australian undergraduate institution). International students, who have not met the minimum entry requirements for the course they wish to enter, commonly do this course before starting their formal university study. Only international students are able to undertake this course.

The program consists of a number of units that the students undertake focused towards gaining the skills and knowledge to succeed in their course of study. Some units are optional but 'Academic English', 'Australian Studies' and 'Computing Skills' are compulsory units that all students must undertake.

#### **3.5.4 Facebook**

Digital social networks are extremely popular social tools that allow people to digitally formalise their social connections. This mixed with the value that the data these networks contain mean that online social networks are well supported and there are many different types available to users. Digital social networks are discussed further in the literature review Section 2.4. The most popular digital social network currently in use in Australian universities is Facebook (Experian, 2012). The popularity and wide scale usage of Facebook in Australian universities made it a suitable choice for use in this research study as it was considered to be the more likely used DSN within the research participant group.

Popularity and likelihood of use were key factors in deciding to use Facebook as the digital social network of focus for the research. 'Facebook' stood out as being the most widely used and popular digital social network (TopTenReviews.com, 2011; DigitalMarketingLab, 2011) and therefore the most likely to be used by the research participant group. Whilst Facebook is an English based social network, it is available for use in over 65 languages (Facebook, 2011) making the English language ability of the research participant less of a potential barrier to use. This popularity and flexibility is important if it is to be able to be used as a common social networking platform for the student participants who were involved in the research.

### **3.5.5 Self-Reported Surveys**

In an attempt to gain an in-depth understanding of how the social relationships and interactions of the research participant group changed over time, three self-reported surveys were undertaken. This approach aimed to identify the use of Facebook by the research participants and to examine both their social relationships and interactions over time. The surveys aimed to collect general participant data as well as time specific data relating to the research participants before, during and after the FSP course.

Survey questionnaires were used for collecting this data. This method is usually accepted as being primarily a positivist approach however this method has also been identified as appropriate for interpretivist research. The choice of method should be based on the objectives of the research and not on pre-conceived ideas about what is appropriate based on philosophical perspective (Charmaz, 2006; Gable, 1994).

The three self-reported surveys were undertaken at three different time points over the course of the 15 month case study. The first survey was undertaken at the commencement of the FSP; the second approximately half-way through the FSP; and the final was after the FSP had concluded. This allowed the collection of a range of data both about the research participants and the changes in their relationships, interactions and uses of Facebook over time. The data obtained from the surveys was analysed using descriptive statistics and social network analysis.

### **3.5.6 Semi-Structured Interviews**

Following completion of the collection of data via the self-reported surveys, the final stage of data collection involved a series of interviews. As the objectives of the research required an in-depth understanding of the social relationships, behaviours and Facebook usage of the participants, more probing of these factors was required beyond that obtained via the survey questionnaires.

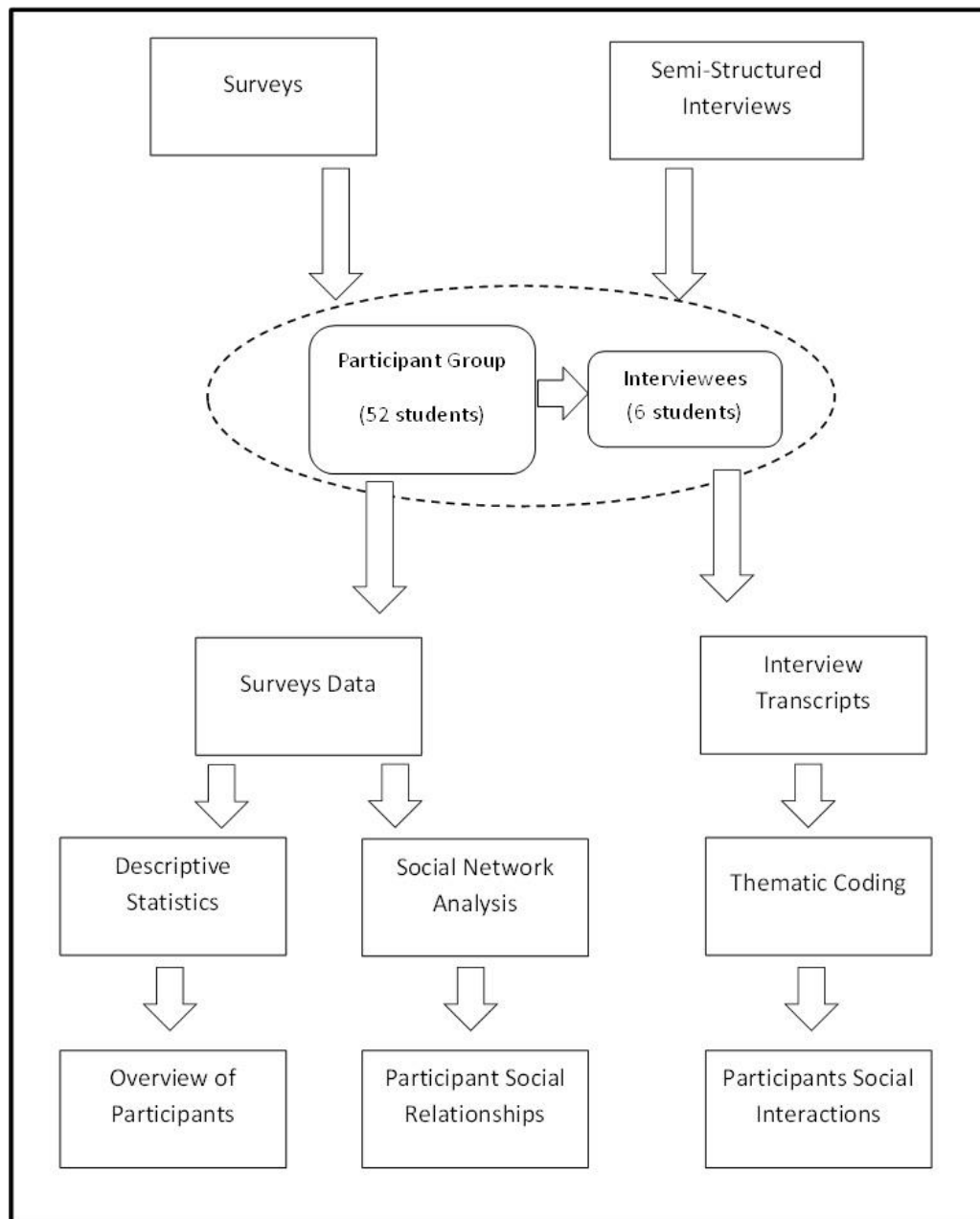
The objectives of this stage of the research were to examine the factors and participants in more detail. The use of semi-structured interviews is one method that allows more data to be collected on specific identified factors and to understand the reasons and thinking behind them (Seidman, 2006; Rubin & Rubin, 2005; Flick, 1998). These interviews were designed around the results from the analysis of the survey data and aimed to further expand in more specific detail on the initial findings. They were used primarily to gain additional understanding regarding the social interactions of the participant group. These findings were then used to generate the interview themes and to identify suitable participants to take part in the interviews. The interview participants were selected to represent a cross-section of the research participant group which would allow the findings from the survey analysis to be filtered back via the interviews and additional data able to be collected for analysis (Ruane, 2005). By filtering the findings back through a select group of interviewees, a greater understanding and a more in depth perspective was achieved.

### **3.5.7 Summary of Research Design**

This section discussed the design of the research project. A contained class of international students studying within a foundation course at the University of Tasmania was examined and Facebook was the selected digital social network that was investigated. Two data collection techniques were used: surveys and semi-structured interviews. The surveys were designed to collect general data regarding the research participants along with the changes in their social relationships, social interactions and use of Facebook over the 15 month case study. The semi-structured interviews aimed to gain more detail regarding these social relationships, social interactions and uses of Facebook.

## **3.6 Tools and Techniques**

This section of the research methodology describes the tools used and the steps undertaken to collect the research data. The overall approach was to use a survey instrument to collect data regarding the social relationships, social interactions and the technology based modes of interaction used by the research participants. The results were used to frame a series of semi-structured interviews with a select group of the participants. The aim was to explore the social connections of a class of international students who had come together to undertake a course of study and to examine what, if any role Facebook plays in those social connections over a 15 month time period. This time period covered the start of the course to four months after its conclusion. The diagram in Figure 3.1 graphically represents the methodological process that was used for this research.



**Figure 3.1 Overview of Data Collection and Analysis**

The diagram graphically indicates that the data collection for this research project occurred using a combination of two formal data collection methods, three self-reported surveys offered to the entire research participant class and six semi-structured interviews with key representatives selected from that participant group.

### 3.6.1 The Demographics of the Participant Group

The participant group used in this research was a multi-cultural group of students from a number of different cultural backgrounds. They are representative of the origins of many of the students that undertake study at the University of Tasmania

with a majority coming from Asia and the Middle East. The breakdown of the countries of origin for the 52 participants used in this study is as follows:

<u>Country of Origin</u>	
Saudi Arabia	13
Malaysia	12
China	8
Korea	4
Hong Kong	3
West China	2
Vietnam	2
England	2
Singapore	2
Japan	1
Bahrain	1
Vanuatu	1
Nigeria	1

**Table 3.1 Participant Country of Origin**

For the purpose of this research the participants are classified in to 3 general cultural groups, 'Asian', 'Middle-Eastern' and 'Other'.

<u>Cultural Generalisation</u>	
Middle East	14
Asian	34
Other	4

**Table 3.2 Cultural Generalisation of Participants**

### **3.6.2 Data Collection Approach One – Survey Questionnaires**

The research used two approaches for data collection with the first method being three self-reported surveys undertaken at different times both during and after the FSP course. This approach involved the collection of survey data relating to the Foundation Studies Program.

#### **3.6.2.1 Aim of this Approach**

The aim of this stage of data collection was to obtain a range of general data in regard to each participant. This data was collected for use in the descriptive analysis and social network analysis stages of the research. This approach looked to produce a broad range of data that would assist in answering both of the primary research questions that are stated in Section 1.3. The social interactions and social relationships of international students have a number of dimensions and as such the survey approach to data collection allowed the collection of a range of different types

of data. The list below identifies the broad categories of data that were collected with each feeding into answering both of the primary research questions:

- Demographic data on the research participants such as their country of origin, languages spoken, and English language ability;
- Computing experience and access to a computer and software while studying;
- Previous use of computing technologies including communication tools and digital social networks (including Facebook);
- Social interactions and activities undertaken during and after class time such as weekend activities, who participants met for lunch, and their class timetable;
- Specific use of Facebook both for class based study and personal use; duration of this usage, estimated skill and frequency;
- Communication behaviours in terms of how participants communicate with others; and
- Locations and activities after completion of the Foundation Studies Program.

The overall objective was to gain an understanding of each participant from a range of different perspectives, such as who they are, their background; their usage of Facebook and their relationships with others from the FSP course which are important aspects relating to the social interactions and social relationships of the research participants.

### **3.6.3 Self-Reported Survey One**

The first survey was undertaken in the first two-weeks of the Foundation Studies Program course in April 2010. This survey was a general information and computing skills survey written by the researcher and given to all students who started the FSP course. This survey is aimed at collecting general information about each international student who begins the course; their personal details, previous technical experience, contact details, course expectations and technology based modes of interaction. The obtained ethical approval for this research allowed this use of data collected via the survey.

The research approach of focusing on a smaller group of participants meant that more detail about each participant was achieved and this survey provided some of the relevant information. As this research was exploratory in nature and the participants not known to the researcher at this point, a range of demographic information was considered useful to better understand who each participant was in terms of their

situation at the time the Foundation Studies Course began. This survey did contain personal information however, the data was made anonymous for purposes of the data analysis as required as part of the ethical permission sought from the University of Tasmania's Research Ethics Committee.

This survey collected the following specific types of information:

- Demographic information for each participant: The questions relating to this theme are designed to provide information on the background of each participant's origin, their home country, their age, previous educational experience and contact information;
- Language ability: This set of questions collected information on participants' language ability. This included the native language of the participant, the level and experience in the use of English and other languages commonly spoken and understood;
- Desired course of university study: The collection of information in relation to the participants' desired course of study once they complete the Foundation Studies Program. This influenced which stream of study the student undertook and the units that they studied;
- Computing resources and availability: This section collected information on the access and usage of computers and computer resources that the participant had access to while studying; and
- Computing experience and ability: This section expands on the previous topic areas by collecting more detailed information about the abilities and usage of computers and computer programs by the research participants. This included computer programs used for communication and interaction with the other research participants.

The survey was completed by 100% of students who were enrolled in the course at that time; this resulted in responses from all 58 students who were currently enrolled at the time the FSP course commenced. Over the duration of the program, six of the research participants withdrew from the course and were no longer available for the research. To this end, only the data from the 52 participants that completed the course was included in the analysis of this data.

The survey was paper based with each participant filling it out by hand. Paper was chosen as the method to collect the data as participants at this time were new to the University and many did not yet have access to the University computer network. The survey took approximately 20 minutes to complete.



The overall outcome from this snapshot formed the basis of the understanding of each research participant and provided insight into their abilities in a range of areas.

### **3.6.4 Self-Reported Survey Two**

The second survey snapshot was undertaken 2 weeks after the commencement of the second semester of study in the Foundation Studies Program. This is approximately 20 weeks since the course commenced. This survey was created specifically for this research and was much broader in scope and scale compared to the data obtained from the first survey.

The aim of this survey was to collect a greater range of data about the research participants. While a wide range of data was collected the primary focus was to obtain detail about the participants' interactions and social relationships with each other and their use of Facebook before the commencement of the Foundation course, during the two week mid-year break the participants had between semesters. The specific types of information collected in this survey included:

- Living arrangements: The living arrangements of each participant, whether they were staying in share accommodation, living alone or staying in a college accommodation environment;
- Lists of the specific communication technologies and social networks they use: The ways in which the participants interact via technological systems and the other social networks that they use;
- Their estimated improvement in computing and Facebook skill: The ability and experience in the use of computers and especially Facebook;
- Details of frequency of English language usage (specifically outside of class time): More detailed information on the use of English outside of the compulsory class time. This included the participant once again estimating the participant's English ability and their level of improvement since starting the Foundation Studies Program;
- Preferred methods of general communication with various groups including people outside of the FSP course: The collected information on the communication and interaction that each participant undertook with other people. This included online based communication and offline methods such as mobile phone and face-to-face;

- Activities with other participants outside of class time: This section collected information on the extra-curricular activities that each participant had undertaken with other Foundation Studies Program students;
- Origins of Facebook usage, duration, frequency and specific actions: This collected more detail about each participant's use of Facebook frequency of usage, duration of usage up to that point and specific actions that each participant undertakes on Facebook;
- Use of Facebook to communicate and collaborate: This section gave specific detail regarding the use of Facebook to communicate and collaborate, specifically with other participants. As Facebook can be used for other purposes beyond just communication this aspect was collected to gain more specific detail on use; and
- Facebook use and communication with other participants during the 2-week break: The 2-week mid-semester break that occurred between class semesters was a time when participants were not interacting for the purposes of the program and for many this also meant travelling back home. This section collected information on whether participants did or did not use Facebook during their time away from the program.

This survey was undertaken during class time and offered to the 52 participant students who were still enrolled in the Foundation Studies Program; six participants had withdrawn from the FSP course by this time. As this survey was designed specifically for the research and not a part of the Foundation Studies Program orientation material, participation was optional. Some participants who were present during that class time declined to participate. During that week the survey was administered there were also 8 overall absentees. Those absentee participants were informed of the survey in a later class and offered time to complete it at their discretion. Overall 46 of the 52 still enrolled students undertook this survey representing an 85% response rate.

This survey was longer and more detailed in comparison to survey one. It was created and conducted electronically using an online survey tool. Each participant visited the same link and entered a unique code that allowed their responses to be re-attributed to them at a later date during analysis while still maintaining anonymity. The survey presented the questions in sections that each participant completed before moving on to the next section. The average time for this survey to be completed was 60 minutes.

Overall the outcome from this survey snapshot provided more detail about each participant, their relationships with others and their experience of using Facebook before the Foundation course; during the course and during the two week break.

### **3.6.5 Self-Reported Survey Three**

The third and final self-reported survey was undertaken in March 2011, approximately four months after the completion of the Foundation Studies Program. This time period included the two-and-a-half month Christmas holiday that occurs before the start of the university teaching year and the first four weeks of Semester one.

This survey was again created specifically for the purposes of this research and was designed to collect data specifically on each participant's social relationships, interactions and technology based modes of interaction with other research participants after the completion of the FSP course. This time period included an extended period of time in which the research participants were not geographically co-located together for the common purpose of study.

As the research investigated the changes to social connections over time, this survey covered two different time periods: immediately after the completion of the FSP course which was a time where participants were no longer studying together; and after the start of the 2011 University of Tasmania year, which is from late February, when participants may or may not been geographically co-located together.

The specific types of information that were collected with this survey included:

- Location during that time: This section aimed to collect information on where the participants spent their time during the period after the FSP course; both the Christmas holiday and the commencement of study;
- Activities undertaken both during and after the holiday: The survey was looking for the activities and opportunities that the participants had to interact with each other.
- Languages spoken and the level of English language use: The survey covered English ability and usage opportunities given that the need to speak English was more optional as the FSP course had finished;
- Interactions with other participants during and after the holiday and how that interaction occurred: The actual interactions and communications with other participants were specifically asked about in this section;

- Planned activities and living location during 2011: The survey was focused on geographic separation between participants in relation to their living arrangements in 2011; and
- Overall use of Facebook during and after the holiday: Asking for specific detail on Facebook usage during the time after the conclusion of the FSP course.

Unlike the first two surveys, it was not possible to undertake this survey in a common classroom environment as the FSP course had concluded and the participants had dispersed. The geographic dispersion meant that in order to complete the survey, each participant had to be contacted and asked if they would be willing to complete the online survey.

In order to contact and invite the participants to participate in the survey, an email was sent to the participants' 'University of Tasmania' and personal email addresses with a reminder of the research information and a link to the online survey. During the administration of the survey over a four week period, weekly reminders were sent to those that had not yet completed the survey. Overall, 31 responses out of a possible 52 were obtained. This was a 60% response rate and seen as a good result given the dispersed nature of the participants at this point in the data collection phase.

It needs to be noted that there were a number of 'issues' that made it difficult to contact all of the participants in relation to undertaking this survey. Contacting the participants via email also proved to be a difficult task for two main reasons. The first is that the provided University of Tasmania email address may have no longer been used by the participants as the course of study had finished and there was no driver to encourage the research participants to access and check their email accounts. The second reason is that during this period of time in early 2011, the University of Tasmania's email system was being blocked by two of the larger email service providers, Hotmail and Yahoo. This caused a number of emails to be returned undelivered. This problem was rectified via repeated sending of emails however intermittent problems with email delivery did continue to occur during this period. Overall, this caused difficulties in contacting all of the research participants.

The outcome of this stage of the data collection provided more detail regarding what each participant was doing after the completion of the Foundation Studies Program course and who they were still interacting and communicating with.

### **3.6.6 Approach One – Summary**

In summary, self-reported surveys were used to collect data from the research participants. These surveys were designed to provide a range of information in regard

to each participant, their social relationships and interactions with others and their use of technology based modes of interaction. The data was used in the descriptive analysis and social network analysis stages of the research. The three surveys were undertaken over the course of the 15 month case study.

### **3.6.7 Data Collection Approach Two – Semi-Structured Interviews**

The second approach to data collection used for this research was the use of a series of semi-structured interviews that were undertaken six months after the conclusion of the FSP course.

#### **3.6.7.1 Aim of this Approach**

The aim of this approach was to compliment the survey data with a detailed qualitative method that allowed more in-depth investigation of the research questions in regard to the social interactions of the research participants. By undertaking interviews with a select group of the participants, certain themes from the outcomes of the survey analysis were explored in more depth. These themes related directly to the social interactions and social relationships of the research participants, both of which are key aspects of the research questions stated in Section 1.3.

### **3.6.8 Sections of the Interview**

The interviews were semi-structured in design which sought specific answers from the research participants but also allowed any ideas or divergences to be further explored as necessary while the interview was in progress. The semi-structured interview structure was broken up into six key theme areas, each with a number of questions designed to probe the interviewee for greater detail. Additional questions were asked by the researcher as needed when further information or clarification was needed or a particularly interesting direction of discussion discovered. This is a key methodological approach in the use of semi-structured interviews (Seidman, 2006; Rubin & Rubin, 2005; Flick, 1998). A copy of the full interview outline can be found in Appendix 3.

The general structure of the interview was as follows:

- Current Situation for 2011: such as course and location of study and experiences so far. This was to better understand the social and geographic aspects of their situation as it stands in 2011;
- Study within the Foundation Studies Program: This included expectations and experiences that could be reflected on once the program has concluded. This helped to give an idea of the participant's thoughts about their time in the Foundation Studies Program;

- Social Interactions and Friendships within the Foundation Studies Program in addition to each participants current situation in 2011: This included details regarding the social interactions and friendships of the participants in 2011, after the program had concluded. This also included ongoing communication and interaction with other participants from 2010;
- Technological system usage in relation to communication and maintaining social connections: This section aimed to gain a greater understanding of the way that technological systems are used by the participants to communicate and interact with others; both participants from Foundation 2010 but also generally with their friends, family and teachers.
- Communication approaches: This section expanded on the above section in that it aimed to better understand how the interview participants prefer to communicate both with and without technological systems; and
- DSN and Facebook usage: This included opinions on Facebook and expectations for the future. This looked specifically at Facebook but also covered other DSN's indicated in the interviews.

While each section was covered during the interviews, flexibility and researcher discretion was used to expand and rephrase the questions as needed. While a common interview structure was used, each interview took its own path to obtaining the required data.

### **3.6.9 Interviewee Identification and Contacting**

Self-reported Survey Three included a question asking the research participants if they would be willing to be interviewed for the research. Of those that indicated a willingness to be interviewed, six participants were selected.

Interviewees were selected based on the aim of having a representative sample of the research participants. They were selected based on their country of origin and their social relationships with the other research participants with a specific focus on their position within the identified clusters of the social network analysis diagrams. These diagrams are discussed in detail in the data analysis - Section 3.7. The social network analysis diagrams can be seen in Appendix 2 and the selected interviewees are highlighted in red. The interviewees were contacted and interviews occurred over a two month period starting in June 2011.

<u>Interviewee</u>	<u>Country of Origin</u>
Interviewee 1	Bahrain
Interviewee 2	Malaysia
Interviewee 3	Malaysia
Interviewee 4	Saudi Arabia
Interviewee 5	England
Interviewee 6	Saudi Arabia

**Table 3.3 Selected Interviewees**

Contact was made by sending an email to the selected participants' email accounts; both their University of Tasmania email accounts and their personal email accounts. These details were obtained from Self-Reported Survey One.

It was identified from the social network analysis diagrams that there was a small Chinese cultural cluster during the FSP course. Interviews with members of this cluster would have been undertaken however none of those participants consented to be contacted regarding being interviewed. The researcher did not believe that this was detrimental to the research.

#### **3.6.10 Undertaking the Interviews**

All six of the interviews were conducted on a one-on-one basis between the researcher and the selected participant. The interviews were organized around the availability of each participant with one or two interviews being undertaken per day over the course of a three week period in July 2012.

Five interviews were held in the School of Computing and Information Systems at the University of Tasmania either in the researcher's office or in a meeting room in the same building. However one interview was undertaken at a local coffee shop. This Interview location flexibility was offered to participants in order to make them feel more comfortable given the potential apprehension of the participant at being interviewed on a one-on-one basis.

The duration of each interview varied but overall each took between 25-60 minutes to complete outside of the general introductory and concluding discussion. All interviews were digitally recorded for later transcription and analysis. However, one participant requested to make some additional comments after the audio recording

had ceased; these answers were noted down by hand and then included in the analysis.

In addition to the audio recording of the interviews some written observational notes were documented for later inclusion in the analysis. These notes were in regard to the demeanour of the interview participants so that some consideration of their behaviour in answering the questions could be included where appropriate.

#### **3.6.11 Approach Two – Summary**

To summarise the second approach, semi-structured interviews were used to interview a select number of the research participants in order to gain a greater level of understanding in regard to the data that was obtained via the analysis of the survey data. The interviews allowed the key themes of social interaction and use of technologies for interaction and communication (including Facebook) to be investigated in greater detail. The aim was to investigate the themes in more depth than was possible via the survey.

### **3.7 Approach to Data Analysis**

This section of the methodology examines the approaches that were used to analyse the data collected via the self-reported surveys and semi-structured interviews. The data analysis involved three different analysis techniques: descriptive statistics generated from the survey data; social relationships diagrams created via social network analysis of the survey data; and thematic analysis of the data from the semi-structured interviews.

The first step in the data analysis process was the descriptive analysis of the survey data in the creation of descriptive statistic data. This was closely followed by the use of the same survey data in the social network analysis process which led the creation of a 16 social network analysis diagrams indicating the social connections of the research participants over the course of the 15 month case study. The results from this analysis were used in the creation of a semi-structured interview design that led analysis of the results via the use of thematic coding. This coding led to the identification of key themes relating to the research aims. Figure 3.2 below provides a graphical representation of the analysis approach.



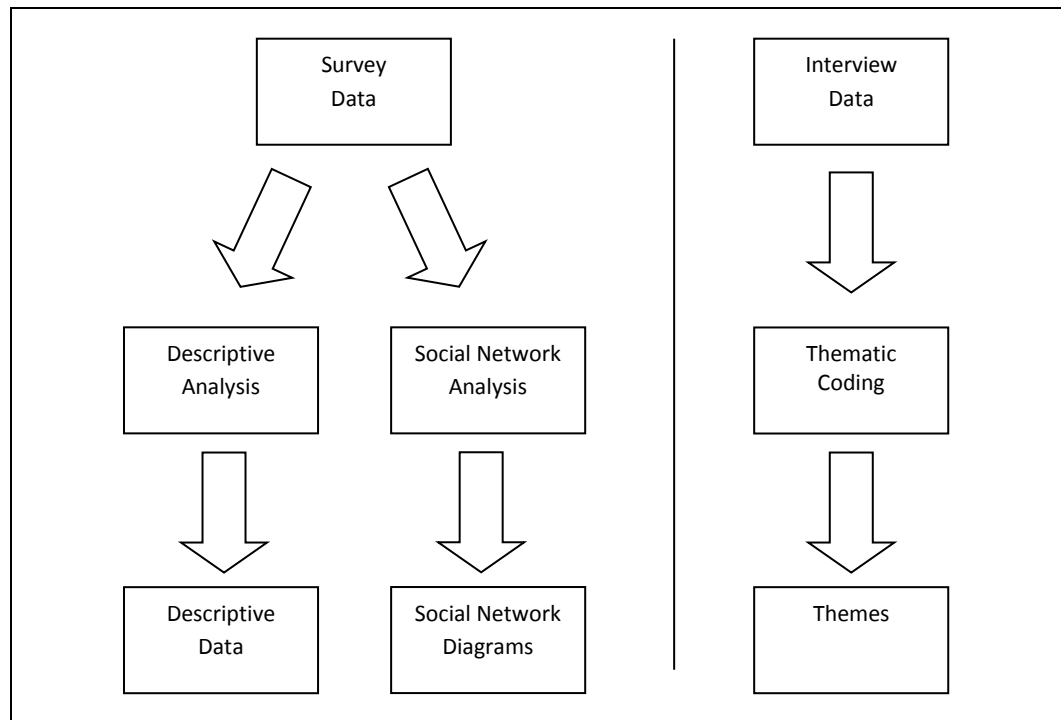


Figure 3.2 Analysis Approach

### 3.7.1 Survey Questionnaire Analysis – Approaches One and Two

The aim of the analysis of the survey data was two-fold: first was to create an overview of the research participant group and the second was to create a number of diagrams to visually show the social connections that existed between the participants over the 15 month period of the case study. This resulted in two approaches to the analysis; descriptive statistics and social network analysis.

#### 3.7.1.1 Descriptive Statistics

The use of a descriptive statistics approach was adopted for the analysis of the survey data. This method allowed the data set from the surveys to be collated together and put into context for a better understanding of the research participant group beyond the individual responses (Rowntree, 1981). While this method is traditionally used in the analysis of vast data sets (Haslam & McGarty, 2003) it has also been adopted for interpretivist analysis when used as a method to describe a situation or phenomena (Sandelowski, 1999).

This descriptive analysis was used to place the whole group of participants into context with one another. To do this the data from all of the surveys was collated together within an Microsoft Excel document and then combined to create a series of graphs designed to broadly represent the research participants as a group. Some examples of this would be: the breakdown of 'languages commonly spoken' by the

research participants; and 'number who had used Facebook before the commencement of the Foundation Studies Program'.

### **3.7.1.2 Social Networking Analysis**

The second method used for the analysis of the survey data was the use of social network analysis. This is a method of analysing social relationship data without the need for complex mathematical formulae (Scott, 1991). It is an analysis approach grounded in the social sciences that looks to graphically show the connections that exist between elements of a group or network (Wasserman & Faust, 1994). Traditionally this process is undertaken via the use of electronic programs that can analyse large amounts of data and determine connections and clustering within that data set. As this research examined the social connections that existed within the small scale social network, this process was undertaken manually which is more effective when data sets are smaller (Scott, 1991).

In the creation of social network diagrams, the two basic elements used are actors or nodes - which are the elements under study; and the relations which are the connections that link these together (Wasserman & Faust, 1994). For this study, the actors are the research participants and the relations are the social connections that exist between them. The relations themselves can be general or directional though for this research study directional relations were used, with relations being classified as either one-way or two-way directional relations. These connections were derived from the responses of each research participant.

In addition to the connections between the participants, the participants were also examined for clustering. Clustering is another way that social network analysis diagrams can be analysed for patterns between connections within the network being examined (Cheliotis, 2010; Scott, 1991).

### **Elements of Social Network Analysis Diagrams**

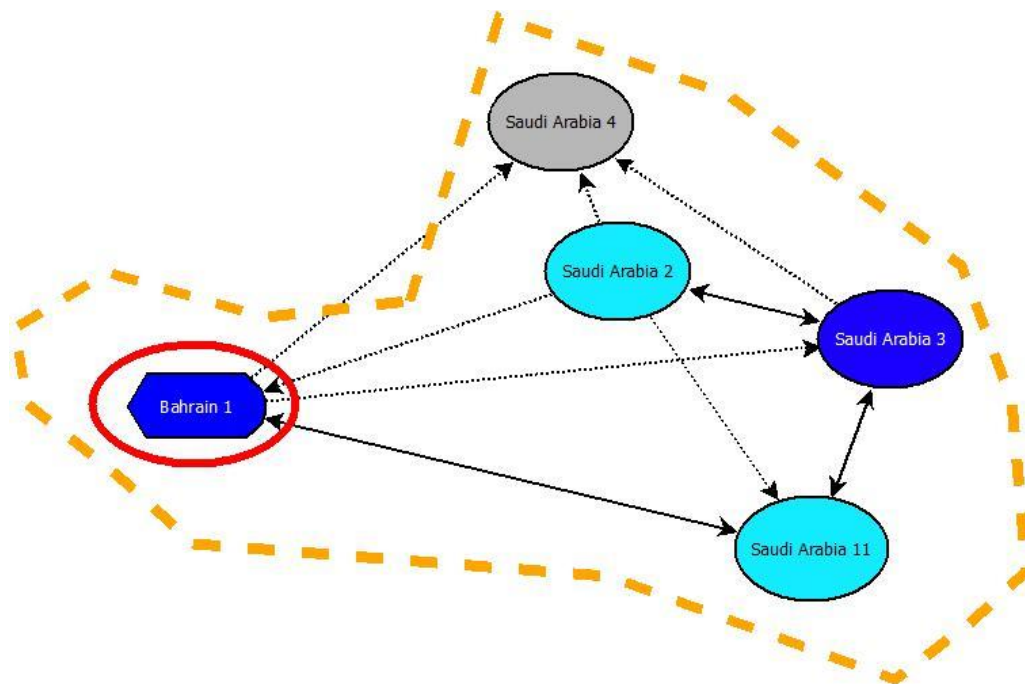
While much complexity can be introduced into a social network diagram, such as the distance between the nodes or the group around a particular participant, this analysis approach only used the connections themselves as being the element of relevance.

The complete collection of social network analysis diagrams is located in Appendix 2. A representation of a segment of one of these diagrams is located below in Figure 3.3. The social network analysis diagrams consisted of the following elements:

1. People: Represented by shapes;
2. Connections: Represented by lines joining the shapes together. The lines come in two forms; two-way connections are shown using solid lines with arrow

heads on each end. one-way connections are shown using dotted lines with an arrow head in the direction of the connection;

3. Country: Represented by the different types of shapes used;
4. Facebook usage: Represented by the colour of the shapes;
5. Clustering: Represented by thick dotted lines circling the shapes; and
6. Interviewees: Represented by thick red circles places around the participants who were interviewed.



**Figure 3.3 Example of a Section in the Social Network Analysis Diagrams**

The social network analysis diagrams have been created under certain limitations. Commonly these types of diagrams are created from larger data sets that allow factors such as frequency of interaction, strength of connection and importance of connection to be determined. However the purpose of these diagrams was not to show these factors as the ethical limitation placed on which and how data could be collected. Due to this, these social network analysis diagrams were created to present a broader overview of the social connections that existed between the research participants over the course of the research study. For example while the strength of a specific social connection could be not be obtained from the diagrams, the number and overall density of connections over the various time points can be seen. This allowed the diagrams to be interpreted from a holistic view of the research participant group and not based on each specific connection.

The three survey questionnaires collected a range of data on the social interactions of the participants: from which classes they studied together to who they lived with, to who they contacted during the holiday period. Copies of the surveys can be found in Appendix 1. The survey included questions relating directly to the interactions and communicative activities between each participant and the answers to these questions were used to identify these connections. Each connection was either one-way or a two-way.

A one-way connection was placed when a research participant reported that they interacted with another of the research participants however that interaction was not recognized by the receiving participant; and

A two-way connection was placed when an interaction was reported by both research participants; this was considered to be a confirmation of a social connection.

It should be noted again that the social network analysis diagrams created are only designed to be representative of the social connections between the research participants and not an indication of frequency, strength or importance of the connection.

Once this was completed the social network analysis diagrams were then analysed for grouping of connections or clusters that were indicative of sub-groups within the research participant group.

### **Rules Applied to Identify Clustering**

The identification of clusters with social network analysis models can be undertaken in different ways. In automated social network analysis diagrams created from large datasets, clustering can be identified using a number of algorithms (Handcock, Raftery & Tantrum, 2007) however as the diagrams in this research are manually created rules were needed to be created to determine the possible clusters. Wasserman and Anderson (1987) and Snijders and Nowicki (1997) noted that clusters can be identified by the data itself instead of by pre-known clustering rules. Therefore in this research, the analysis of the diagrams led to the creation of a set of rules to assist in the identification of the clusters that existed.

The clustering rules were designed by the researcher to clarify the groupings that existed between the research participants. These rules are not designed to determine the exact size of the cluster but to give a general indication of where they are located and those nodes that are likely to be a part of it.

The following rules were created to assist in the identification of the clusters:

1. An initial cluster occurs when there are 3 or more individual nodes with two-way connections joining them together.
2. A node is included in a cluster when:
  - a. The node has two or more two-way connections to other members of that same cluster;
  - b. The node has three or more incoming one-way connections from other nodes from that cluster that also have multiple connections to other nodes in the cluster;
  - c. The node has two or more incoming one-way connections when the participant that node represents did not answer/complete the survey AND has the same country or common first language; and
  - d. The node has a mix of three or more connections to other nodes in the same cluster. The connections for this must be a mix of incoming and outgoing connections.

By using these created rules, the clusters that exist within the social network diagrams were identified and a basic indication of clustering within the Foundation Studies Program was obtained.

In total 16 social network diagrams were created and they fell into four broad categories relating to the participants studying in the FSP course:

1. Before: representing the connections between the participants before undertaking the FSP course;
2. During: representing the connections between the participants approximately half-way through the FSP course;
3. After – Holiday: representing the connections between the participants after the completion of the FSP course with a focus on the Christmas holiday period between November and February; and
4. After – Study 2011: representing the connections between the participants after the completion of the FSP course with a focus on the time after the start of Semester One at the University of Tasmania.

Each category of diagram was displayed in four different ways in order to improve the readability and understanding of the complete diagram. These were:

1. The complete diagram;

2. The diagram presenting only the use of Facebook and the clusters;
3. The diagram presenting only the one-way and two-way connections and the clusters but no Facebook usage; and
4. The diagram presenting only the two-way connections and the clusters.

As the diagrams were completed manually, a suitable program was needed to draw the shapes, connections and clustering lines required. The diagrams were created using a freeware drawing software program called 'Dia'. This program allowed shapes to be created and those shapes could then be joined together via directional lines that allowed the elements to be moved but still connected together.

The created diagrams were then subjectively analysed looking for patterns in relation to the connections, clustering and use of Facebook over time.

### **3.7.2 Interview Analysis – Approach Three**

The third approach to analysis for this research was the examination of the six semi-structured interviews. The aim was to extract the key themes from the interviews that allowed a greater understanding of the social relationships, interactions and uses of Facebook by the research participants before, during and after studying the FSP course.

The analysis method used an approach called thematic coding. This approach generates key themes and ensures that the outcomes are generated and supported by the data (Strauss & Corbin, 1990). By using this method the aim was to identify themes from the interview responses and observations that assist in answering the research questions (Miles & Huberman 1994). It is important that the themes obtained are driven by the data and so this method is also seen as a way to overcome any pre-conceived biases and assumptions that can commonly be brought into the analysis process by the researcher (Strauss & Corbin 1990).

In order to prepare for this stage of analysis, the interviews were audio recorded and then transcribed. Additional unrecorded details and observational notes were also written and added to the transcriptions as needed. This process involved listening to each recorded interview in turn and typing out the interview for each research participant. At completion, the interviews were read and checked and any necessary changes were made before the formal analysis process began.

The codes from this analysis technique were brief descriptions, or themes, generated from the underlying meaning that were extracted from the interviews (Strauss, 1987). Thematic coding is an iterative process that involves repeating a series of steps until a

final list of themes are obtained from the interview data. The process involves examining the interview transcripts sentence by sentence and or paragraph by paragraph and summarizing the key ideas that exist. For this process a sentence level analysis was used where the key ideas from each sentence(s) response by the interviewee was identified and recorded. Each sentence may have had more than one key. These key ideas formed the necessary 'codes' that were identified, compared and condensed during each iteration of the analysis process.

Each step created a series of codes which were then grouped together to form broader themes that were then compared back to the interview transcript and notes for confirmation (Boyatzis 1998). The process repeated until it could not be undertaken any further and the end results were a number of distinct ideas or themes. It is the final list of themes that were then interpreted in relation to the aims of the research.

Table 3.4 located on the next page is an example of the first stage of the thematic coding process. This process involves generating summary codes from the interview transcript and repeating this process until the codes could not be summarized any further. In the example interview extract below: **1.)** identifies the first sentence and the four iterations of the analysis. The first iteration provides a summary of the meaning of the sentence. The following three iterations further condense and summarise the meaning until the final code associated with that sentence is '**Initial Expectations**'. This is the researcher's interpretation of the meaning of the first sentence. The process then continued for the remainder of the paragraph. While **2.)** followed a similar process, separate meaning was extracted from the sentences proceeding **3.)** and **4.)**.

This process was undertaken using the transcripts from all six undertaken interviews. Once this first stage of analysis was complete, stage two began.

<u>TRANSCRIPT</u>	<u>ITERATION 1</u>	<u>ITERATION 2</u>	<u>ITERATION 3</u>	<u>ITERATION 4</u>
	<b>1.)</b> Initial expectations were that the FSP course would be difficult and time consuming to undertake.	Student expectations related to their proposed course of study	Initial expectations related to the environment in which they will study	<b><u>Initial expectations</u></b>
Ok, so how did you find the Foundation program? Did it meet your expectations?	<b>2.)</b> The participant's 1st priority is their study.	Student has priorities for doing the course of study	<b><u>Educational Priorities</u></b>	
<b>1.)</b> Yeah, more than that because I thought it would be hard and it would take all my time and I wouldn't have friends, <b>2.)</b> I would just study and study and study for the whole night but then <b>3.) 4.)</b> I found that I could study and make friends and I work in a group. I didn't used to work in a groups, in Foundation it was my first time working in groups, I always work individually.	<b>3.)</b> The participant showed a desire and ability for social interactions with the other participants	Participant wanted to be social with others	<b><u>Social confidence</u></b>	
	<b>4.)</b> The group work aspects were a new experience that allowed social interactions with other students to occur	Opportunities to interact with other students were present	<b><u>Education based social opportunities</u></b>	

Table 3.4 First Stage Coding Example – From Interview Four



In the second stage, the list of codes that were generated from the analysis of all six interviews was grouped together in a further iterative process. This process involved removing the boundary associated with each individual interview by grouping the created codes together in order to generate a list of unique sub-themes. The aim of the thematic coding stages was to take the large number of codes that had initially been produced and to continuously condense those codes down into the key themes (Boyatzis 1998). The example in Table 3.5 provides an example of this process that included further condensing the generated codes. In the example below, the four codes generated from stage one are further grouped into sub-codes. A justification is listed in relation to the consideration and reason for the grouping, for example, **Initial Expectations** are grouped into the **Social Environment** sub-theme as the initial expectations related to the social expectations and opportunities of the study environment.

The example below also contains brief justifications, based on the researcher's interpretative analysis, for the grouping of the codes. The highlighted (**bold**) initial codes continue on from the example located above in Table 3.4.

<b><u>Initial Codes</u></b>	<b><u>Justification of linkage</u></b>	<b><u>Sub-Themes</u></b>
<b><u>Initial expectations</u></b>	Expectations relating to the social environment that they will experience	<b><u>Social environment</u></b>
<b><u>Educational priorities</u></b>	Educational outcomes were a priority and main reason for study	<b><u>Motivation and focus</u></b>
<b><u>Social confidence</u></b>	A person with social confidence has greater opportunities to socially interact	<b><u>Social opportunities</u></b>
<b><u>Educational based social opportunities</u></b>	The social opportunities that were afforded by the educational environment	<b><u>Social opportunities</u></b>
New social experiences	The participant had a social experience	<b><u>Social experience</u></b>
Educational benefits	The participant had particular needs related to their educational undertaking	<b><u>Educational needs</u></b>
Positive educational experience	Part of the educational experience had by the participant was the social experience	<b><u>Social experience</u></b>
Social benefits	A benefit of having social connections is the social support that they provide	<b><u>Social support</u></b>

Educational development	Their educational development is part of the participants focus for study	<b><u>Motivation and focus</u></b>
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Table 3.5 Second Stage Coding Example

At each stage codes are condensed and combined with other codes, grouped under a broader code or discarded as not being relevant to aims of the research. The final codes formed the key themes that went toward answering the research questions (Miles & Huberman, 1994). By following this process, the final list of themes were generated and grounded in the data. This process also minimizes the preconceived biases and assumptions that the researcher could have brought into the analysis process if just analysing the interviews at the surface level (Strauss & Corbin 1990). Table 3.6 provides an example of the leading to the final stage of the thematic coding process.

<b><u>Sub-Theme</u></b>	<b><u>Justification of linkage</u></b>	<b><u>Final Theme</u></b>
<b><u>Social environment</u></b>	The social aspects of the environment influenced the participant	<b><u>ENVIRONMENTAL INFLUENCES</u></b>
<b><u>Motivation and focus</u></b>	These are influenced by the environment and in turn influence the environment	
<b><u>Social opportunities</u></b>	These come from the environment the participant is in	
<b><u>Social experience</u></b>	Is provided by the environment	
<b><u>Educational needs</u></b>	Need for support and social interaction come from the environment	
<b><u>Social support</u></b>	Support from others comes from the environment	

Table 3.6 Final Theme Example

### 3.8 Approach to Interpretation and Discussion

This section describes the approach used in Chapter 5 to interpret and discuss the results that were obtained from the data analysis in Chapter 4. The analysis of the research data provided a range of quantitative and qualitative outputs that were interpreted by the researcher and then discussed in relation to the existing body of literature.

The aim of the data interpretation was to examine the outcomes from the analysis in relation to the key aspects of the research. This was undertaken by combining and examining the outcomes from each of the three analysis methods as covered in Section 3.7.1.1, 3.7.1.2 and 3.7.2. The outcomes were examined and interpreted to gain insight in relation to the social interactions between the members of the research participant group; the identification of the social relationships between them; and the use of Facebook over the course of the 15 month case study.

It was expected that an examination of the descriptive statistics obtained from the three undertaken surveys would allow a broad evaluation of the research participant group in relation to a range of variables at play in the social connections between a class of international students. An examination of the social network analysis diagrams would allow a graphical representation of the social relationships of the research participant group at different time points over the 15 month case study. The outcomes from the thematic coding would give an indication of the factors at play in determining if and how social interactions between the research participants were undertaken.

Each of the key interpretations were also examined and compared back to the current body of literature. This was done in order to discuss the similarities and differences that existed between the researcher's interpretation of the research outcomes and what has already been presented by past research. This comparison and discussion allowed key similarities and differences to be identified.

### **3.9 Research Limitations**

This section has been included to cover the specific limitations that are present in this research, what the impact of those limitations was and how these limitations were dealt with in relation to data collection and analysis.

The first limitation was in relation to the ethical restrictions that were placed on the type of methods that could be used to collect data. The ethical concerns expressed by the University of Tasmania's Ethics Committee related to the risks associated with collecting data in relation to students online and offline behaviour which is discussed in greater detail in Section 3.2.1. These restrictions prevented observational data from being collected and used as part of the research. In order to overcome this limitation a combination of survey and interview data collection techniques were used. While observational data may have allowed greater discussion in relation to the specific behaviours of participants, the focus of the research was instead looking at the participants as a group.

A second possible methodological limitation was the size and demographic make-up of the research participant group. The participant group consisted of 52 international students however this group could not be considered large enough for a statistical analysis alone to be a suitable method of analysis. Due to this, data was collected using two separate collection techniques; multiple self-reporting surveys and semi-structured interviews. The data was also analysed using three different analysis techniques: descriptive statistics, social network analysis and thematic coding. These analysis techniques used a qualitative approach that is best suited for research using small sample sizes.

Also in relation to the participant group was the fact that it was dominated by participants from Malaysia and Saudi Arabia however, there were still students present from eleven other countries. A break-down of the participant demographics can be found in Section 3.6.1. This was not seen as a limitation but as a strength towards this qualitative study as it allowed indications of social connection formation by country of origin to be examined.

A final limitation of the study was due to the participant group that was examined, namely the differences in English language ability between the participants. Both the participants' first language and level of English ability varied and so a common level of comprehension, especially in relation to the survey collection tool, could not be guaranteed. While a base-level of English language ability is a pre-requisite for coming to study in Australia, the data collection techniques were designed and written with this limitation in mind. The used survey tools were written in a way to make understanding easier by attempting to use simpler vocabulary and structures where possible. This was influenced by the researcher's experience interacting with international students.

In summary, there were some clear methodological limitations present while undertaking the research. However, it is believed that the aims of the research, the approach to data collection and the qualitative nature of the study, considered these limitations and minimised them where possible.

### **3.10 Chapter Reflections**

This chapter has provided a description of the research methodology that was used in the undertaking of this research. The research used a subjective ontology and an interpretivist epistemology as the underpinning research philosophy which directed the collection and analysis of both qualitative and quantitative data.

The research strategy involved examining a group of international students who had come to study at the University of Tasmania. These participants were examined over the duration of their study course where their social relationships and their use of Facebook were examined.

Data was collected using two different approaches. The first was three self-reported surveys that collected data about each participant, their social connections and their use of Facebook. The second method of data collection was the use of semi-structured interviews. These interviews were undertaken in 2011, after the research participants had concluded their study in the FSP course.

Data analysis was undertaken using three different approaches. The first approach was the use of the survey data in the creation of descriptive statistics that aimed to generally describe the participants as a group. The second approach also used the survey data in order to create a series of social network analysis diagrams graphically presenting the social connections between the research participants over the course of the case study. The final approach to data analysis was the use of thematic coding to extract the key themes that were present in the interview data.

Each of the results from the analysis were interpreted and discussed separately from each other in order to have three different sets of outcomes that were used to answer the research questions.

# Chapter Four

# Data Analysis

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## **4 Chapter Four – Data Analysis**

### **4.1 Introduction**

This chapter describes the analysis of the data collected using the methodology described in Chapter Three. It covers the analysis of the two sets of collected data; the three surveys undertaken by the research participants and the semi-structured interview undertaken with six selected participants. This data set was analysed using three different approaches. The survey data was statistically analysed toward the creation of a range of descriptive statistical diagrams. The survey data was also used to create a set of social network analysis diagrams representing the social connections of the participants over the 15 month case study. The semi-structured interviews were analysed using thematic coding that led to the identification of key themes relating to the research aims.

- Section 4.2 details the three surveys used to collect data and then covers the results obtained from the descriptive analysis of that data. The data from the surveys was analysed in order to gain an understanding of the research participants as a group. This section presents the results from the survey as bar and pie graphs along with a description of the outcomes;
- Section 4.3 describes the analysis from the social network analysis approach as described in Chapter Three. The data graphically represents the social relationships of the research participants at three different time points: before the Foundation Studies Program had begun; during the undertaking of the Foundation Studies Program; and after the Foundation Studies Program had concluded;
- Section 4.4 covers the analysis of the semi-structured interviews. The semi-structured interviews were the second stage of data collection undertaken approximately 6 months after the completion of the Foundation Studies Program. Details regarding the undertaking of these interviews can be found in Chapter Three. These interviews were analysed using a thematic coding approach and the resulting 'themes' are presented in this section;
- Section 4.5 compares the outcomes from each analysis approach together in order to identify the similarities and differences that were present; and
- Section 4.6 summaries the outcomes and results from the chapter.

### **4.2 Survey Analysis**

This section will discuss the analysis of the three surveys that were used to collect data from the research participants. The results from this section were obtained using

descriptive and inferential statistical analysis. The analysis will discuss the results from each survey using a 'time' perspective as the main aim of the surveys was to collect a range of data about the participants over the course of the Foundation Studies Program at the University of Tasmania. The three surveys collected a range of different data in relation to these time periods. A brief overview of the surveys and the types of data collected are listed below:

- Survey 1: undertaken in the first 2 weeks of the Foundation Studies Program and collected data on participant demographics including language ability, languages spoken, self-reported computing ability and experience and usage of Facebook. This survey was given to all students at the commencement of the Foundation Studies Program;
- Survey 2: undertaken two to three weeks after the mid-year holiday and collected more demographic data about each participant including living arrangements, English language usage, social relationships and interactions with other participants, and usage of Facebook and other communication technologies. At the point when this survey was undertaken the participants had completed 17 weeks of study together and had just taken a 2 week holiday, at which time no classes were held. This survey was specifically created for the purposes of this research project and as such included some questions for data that was not collected in Survey 1; and
- Survey 3: undertaken 3 months after the conclusion of the Foundation Studies Program and collected social interactions, technological system and Facebook usage and communication both during the holiday (from November 2010 – February 2011) and after the start of the new university semester (end of February, 2011).

The data analysis will be presented using the following structure: Baseline data, 'Before' the FSP course, 'During' the FSP course, and 'After' the FSP course.

#### **4.2.1 Base Line Data Analysis**

The first section will cover the base line data in relation to the research participants and how the whole participant group can be described. This data was obtained primarily from Survey 1 but also supplemented by Survey 2 which provided additional data regarding specific digital social networks used by the participant group.



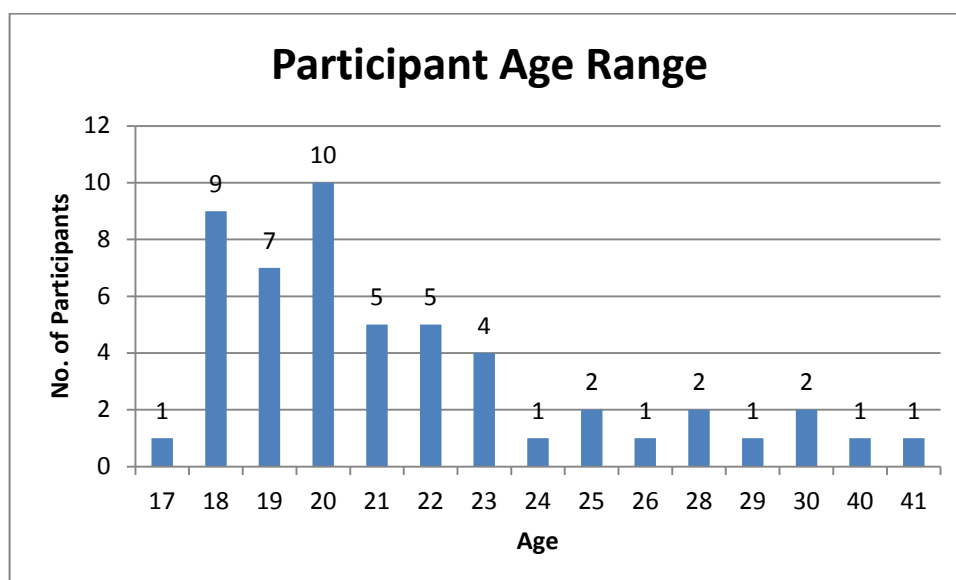


Figure 4.1 Participant Breakdown by Age

The participants were all students who had enrolled and had completed the course by November 2010. As Figure 4.1 shows, the participants had a broad range of ages, the youngest at 17 years of age to the oldest at 41 years of age. Although there is a wide range of ages, 40 of the 52 participants fell between the ages of 18 – 23 years of age. This is to be expected as the nature of the FSP course. The course is designed to prepare international students for study at the University of Tasmania and so the common demographic that is attracted are students who have recently come from high school level education in their home countries. Older participants are also present as age is not a restriction in enrolling in the Foundation Studies Program.

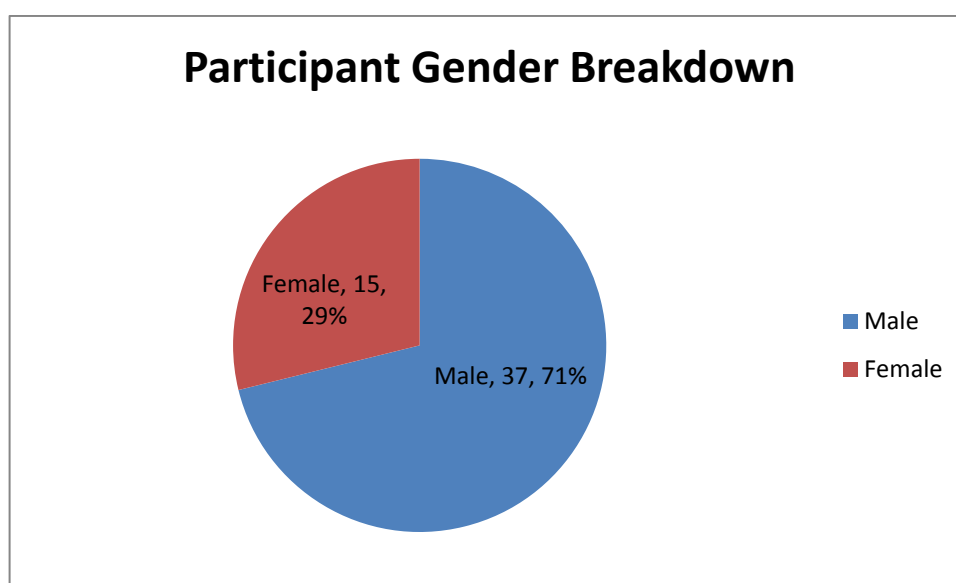


Figure 4.2 Participant Gender Breakdown

Figure 4.2 shows the breakdown of the participants by gender. There were 37 males and 15 females as part of the group resulting in there being substantially more male participants compared to female participants. Gender can play a role in social connections as it is a common factor in group formation. In addition gender can also play a role in cultural norms and understandings of what is accepted in relation to gender interactions. As the participant group included students from Saudi Arabia and Bahrain, gender was a consideration. In this region, interactions between males and females are heavily influenced by cultural rules that forbid inter-gender interactions unless part of the same family.

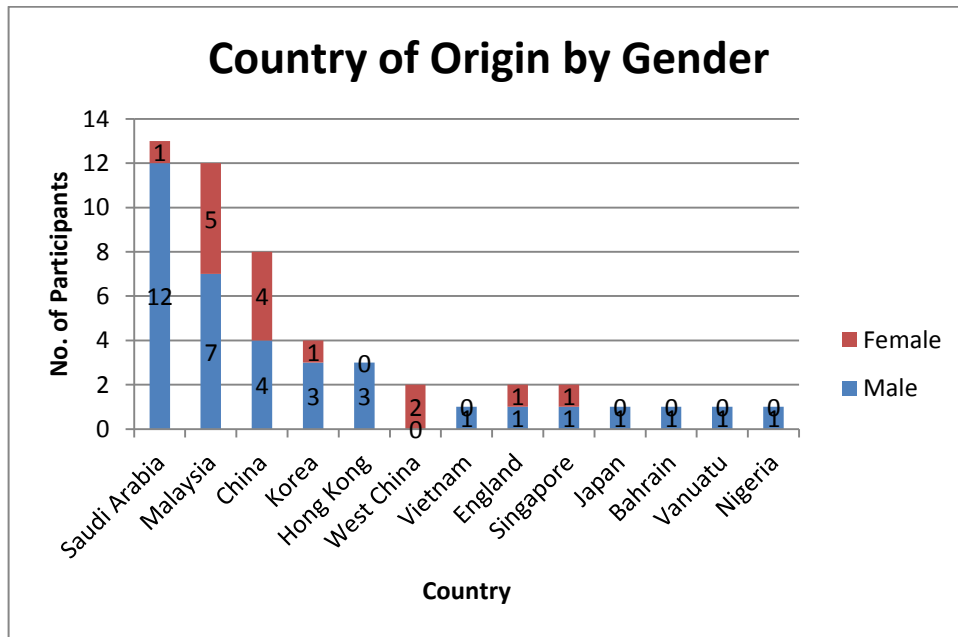


Figure 4.3 Country of Origin

The participant group was culturally diverse with participants coming from many different countries, as can be seen in Figure 4.3, the three largest countries of origin for the participants was Saudi Arabia (with 13 participants), followed by Malaysia (with 12 participants) and China (with 8 participants). The rest of the participants came from a wide range of different countries that are primarily located in the Asian region however other participants came from countries such as England (2 participants), Vanuatu (1 participant) and Nigeria (1 participant). Having such a diverse group of participants indicates that the experiences and backgrounds of the participants are wide ranging and that those experiences may play a role in the social groups that are formed. For example, those from the same country of origin are more likely to have similar experiences and backgrounds. This makes interactions easier due to use of a common language, and may thereby make social relationships easier to create.

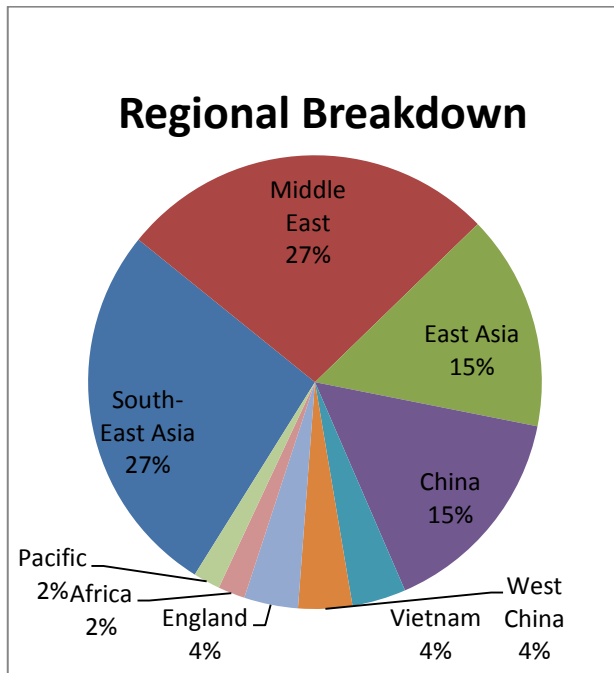


Figure 4.4 Regional Background

<u>Region</u>	<u>Countries Included</u>
South Asia	Malaysia, Singapore
Middle East	Saudi Arabia, Bahrain
East Asia	Japan, Korea, Hong Kong
China	China (East)
Vietnam	Vietnam
West China	West China
England	England
Africa	Nigeria
Pacific	Vanuatu

Table 4.1 Regional Groupings

While having similar countries of origin may play a role in the social groups that are formed, Figure 4.4 generalizes the participants by geographic region. This group looks to take into account the cultural similarities that may exist between those from different countries but from similar geographic regions. The geographic regions are grouped as shown in Table 4.1.

This grouping of countries into regions has been used for convenience and is a subjective view of the regions. The experience of the researcher played a role in creating these regional groupings although some grouping could overlap in some instances. An example is the 'West China' grouping. The geographic location of these participants strongly implies that they have similarities with both the 'China' group and the 'Middle-Eastern' group.

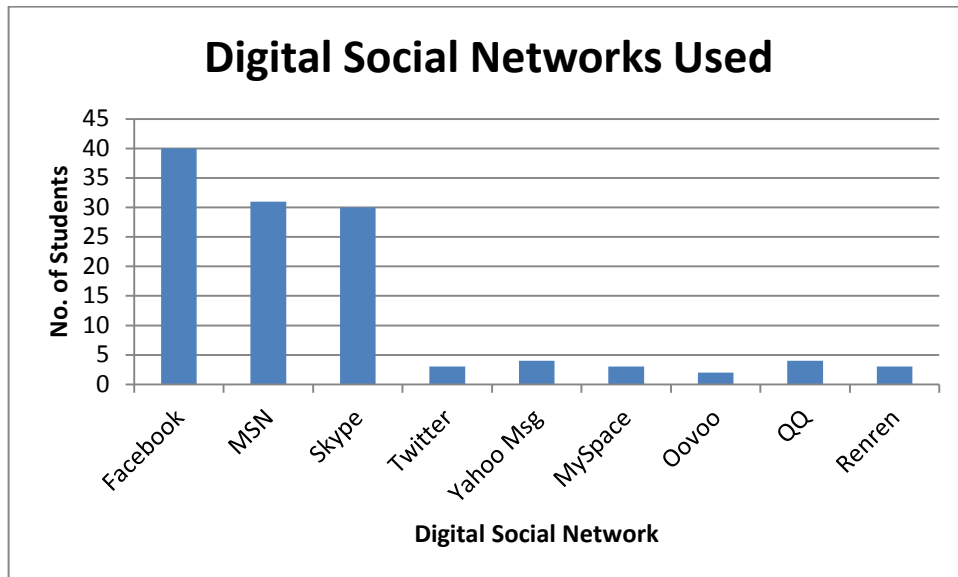
The geographic regions can often have similarities in language and culture that may make the formation of social connections easier for those from the same region. Figure 4.4 shows that the four main geographic areas the participants originated from are South Asia (14 participants), the Middle-East (also with 14 participants), East Asia (8 participants) and China (8 participants).

Chinese	21
Arabic	14
English	12
Malay	8
Korean	4
Cantonese	3
Vietnamese	2
Uygur	2
Japanese	1
Raga	1

**Table 4.2 Spoken Languages**

Considering that the participant group came from a wide range of countries, it is to be expected that the languages spoken by the research participants would be varied. Table 4.2 lists the primary languages that were spoken by the participants in the Foundation Studies Program in 2010. This list includes all of the primary languages spoken, so in some cases participants indicated that they had more than one primary language, which is to be expected in countries with diverse populations and varying cultural family backgrounds. For example students from Malaysia with a Chinese family background can often speak English and Chinese fluently. Table 4.2 shows that English is by no means the dominant language of the research participants and as such this may play a role in the ability for the participants to be able to interact and communicate with other students. English is the common language that all participants can communicate and interact with. The Foundation Course is conducted exclusively in English and includes six hours of direct Academic English language teaching each week designed to improve students' ability at using university level English language skills.

When it comes to interaction, having a common language is important and while English is the language that all participants have in common, they may not necessarily have had a high level of confidence or ability in using it. This could restrict the ease with which social interactions occur and social connections are developed.



**Figure 4.5 Digital Social Networks Used**

It is widely reported that Facebook is the world's most popular digital social network and the research data support this with 40 out of the 52 participants indicating that they do use Facebook and thus supporting the belief that Facebook is the most popular social network at play within the participant group. What is also indicated in the Figure 4.5 above is that Facebook is not the only popular digital social network used. MSN and Skype have also scored highly. While Facebook, MSN and Skype can be classified as digital social networks they have aspects both in common and different from each other. For example, while all three methods allow users to interact with their social connections, they have different core purposes: Facebook aims to interact with a broader social group; MSN is designed for text messaging a small group of connections; and Skype is primarily designed to allow voice and video calls. So, while each has aspects in common, their high popularity may be an indication of them being used with different audiences and for different purposes.

#### **4.2.2 'Before' the FSP Course Data Analysis**

This section examines the data that was collected and analysed in relation to the research participants 'before' they had started to undertake the Foundation Studies Program in 2010. It uses data from both Survey 1 and Survey 2.

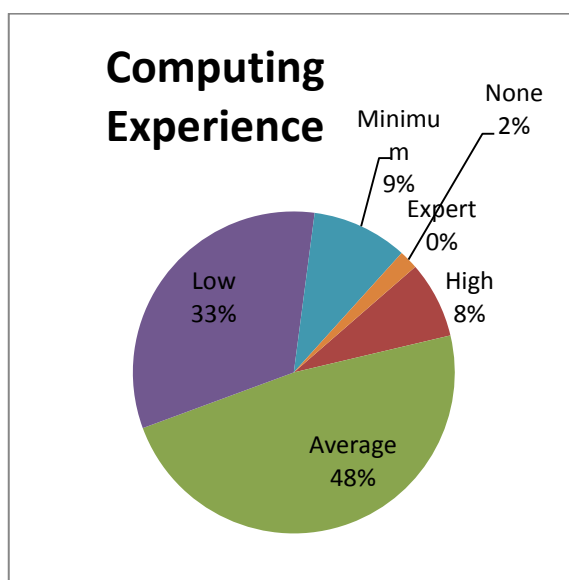


Figure 4.6 Computing Experience

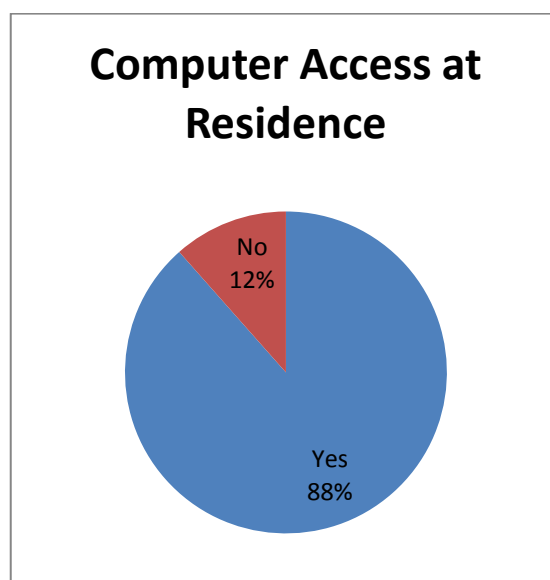


Figure 4.7 Computer Access at Residence

Figure 4.6 indicates that a majority of the participants grouped themselves as having and low to average amount of experience in using computers. This is of relevance as when considering the use of a technology based approach to interaction, such as the use of Facebook. The aim of this aspect of the survey was to generally gauge what the participants thought of their own computing ability and to generalise this to their level of confidence in using computing systems. It is not possible to see this as an accurate indication of 'actual' ability as this would have required more direct interaction and assessment. What the graph indicates is that most of the participants had an ability to use a computer, a generalisation that cannot be guaranteed due to the differing educational backgrounds.

The ability to use the computer is obviously related to the use of a digital social network. A majority of the class considered themselves to be competent users of computer technology and so their ability is unlikely to have been a barrier in the use of technological systems to socially interact. The 'minimum to none' computing indicators are more likely to find the use of systems and computers as a barrier to social interaction via digital social network.

Figure 4.7 indicates that having access to a computer at the participants' place of residence was also common. Having access to a computer is one of the primary ways that digital communication occurs but it also allows participants to use the computer for a range of purposes (such as study) without having to be physically present at the University. Not having access to a computer at home may indicate a lack of familiarity or accessibility with computers on behalf of those participants.

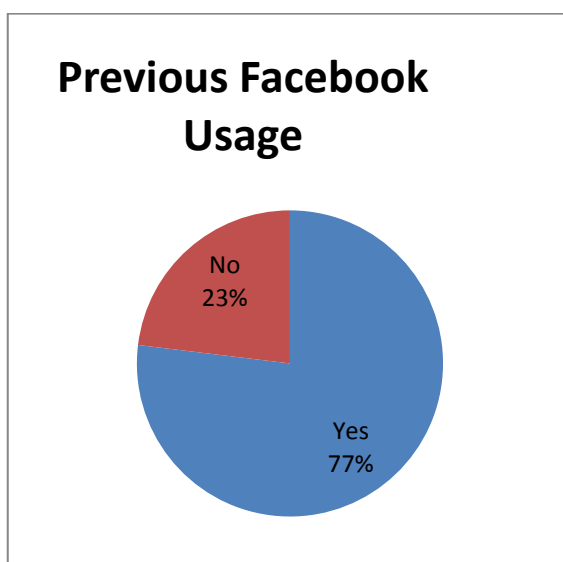


Figure 4.8 Previous Facebook Usage

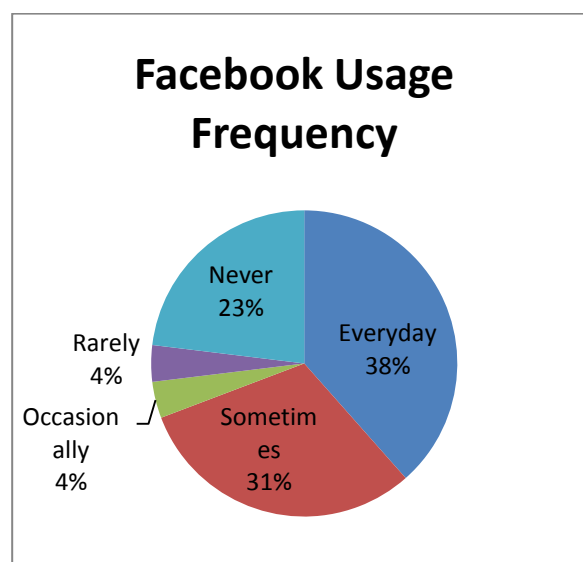
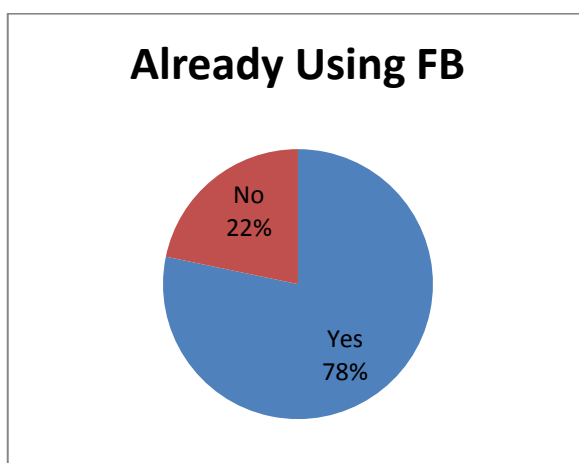


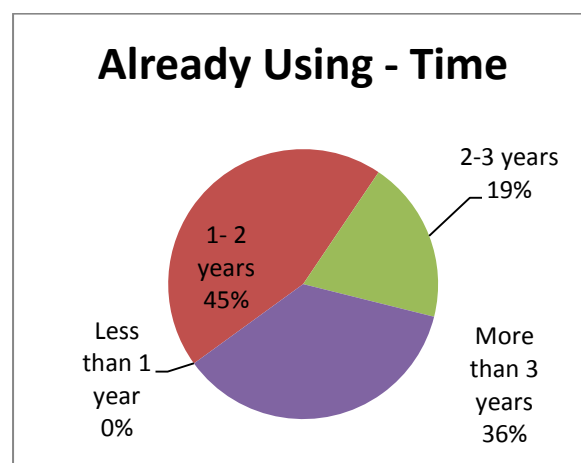
Figure 4.9 Facebook Usage Frequency

The research used Facebook as the primary digital social network under analysis and so Figure 4.8 indicates that a large proportion (77%) of the participant group had previously used Facebook before commencing the Foundation Studies Program in 2010. The high rate of initial usage would indicate that it was not the Foundation social group was not a driver for starting to use Facebook. It is the nature of Facebook and the associated social connections that drive its usage and so with a majority of participants having already used it which indicates that the class is not the reason that they were introduced to it. However the 23% of participants who had not used it before commencing the course may have been influenced by others to use it. This finding only identifies if participants had used Facebook before and does not indicate to what frequency or for how long that use has been going on. The amount of time the participants have been using Facebook was collected in survey 2 and Figure 4.9 gives an indication of frequency of usage.

The frequency of Facebook usage is indicated in Figure 4.9, of those that had used Facebook prior to the commencement of the Foundation Studies Program indicated a relatively high to medium usage with the majority of responses indicating that participants used Facebook 'everyday' or 'sometimes'; only four participants indicated that they had only occasional use. This could be an indication that those who use Facebook are likely to use it often and not be occasional users. The analysis however does not provide information on those who do not use Facebook.

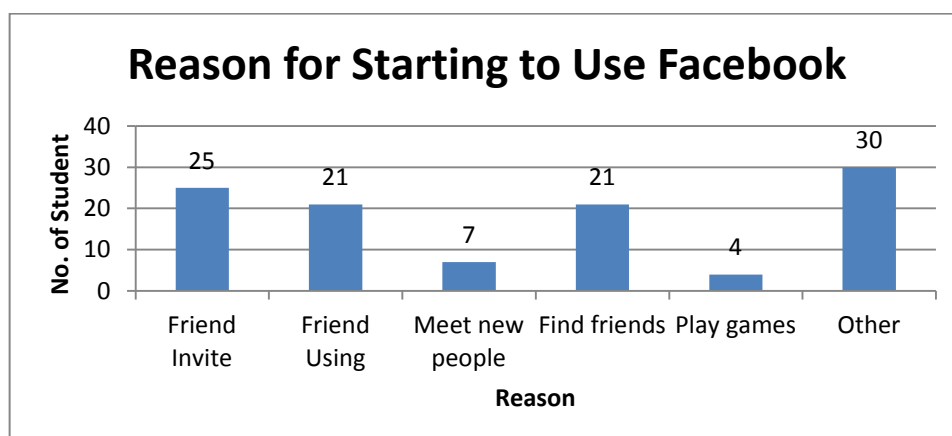


**Figure 4.10 Already Using Facebook Before FSP 2010**



**Figure 4.11 Duration of Facebook Usage Before FSP 2010**

Figure 4.10 & Figure 4.11 indicate that a majority (78%) of participants were already using Facebook before the Foundation Studies Program began and so the indications in Figure 4.11 are that of the 78% who had been using Facebook had been doing so for more than one year. Those who were using Facebook before the FSP began had some experience with it while the others had not used it before.



**Figure 4.12 Reasons for Starting to use Facebook**

Figure 4.8, Figure 4.9, Figure 4.10 and Figure 4.11 are indications of the use of Facebook by the participant group. Figure 4.12 presents an overview of the reasons why the participants had started using Facebook. Participants were asked to indicate their reasons. It can be seen that there was no one specific reason for choosing Facebook and in fact many participants indicated more than just one reason. The primary social reasons for using Facebook, 'Friend invite', 'Friends using', & 'Find friends' did rate highly but so too did 'other'. In the 'other' category participants listed a wide range of different reasons for starting to use Facebook, from 'the purpose of communication', 'because others are using it', and 'to keep in contact'. The other identified reason given was that



the participant joined 'for fun' however this response is not too informative as to the motivations behind initial usage.

#### 4.2.3 'During' the FSP Course Data Analysis

This section examines the data that was collected and analysed in relation to the participants during the undertaking of the FSP course in 2010. This data relates to the 18 week period of the FSP course with semester one (16 weeks) having been completed along with a two week holiday. This section uses data from Survey 1 and Survey 2.

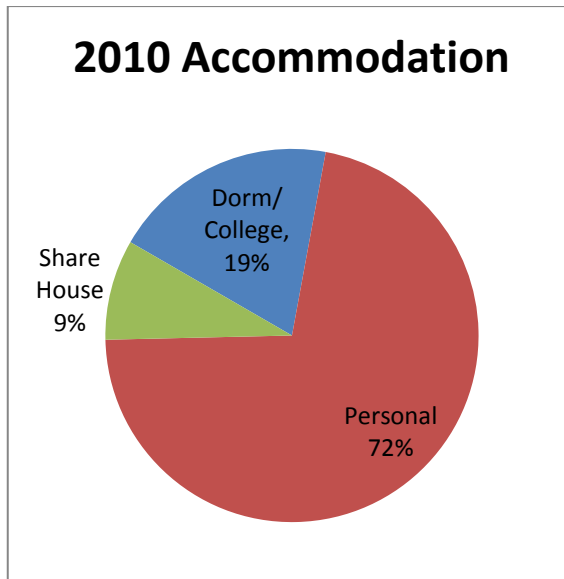


Figure 4.13 2010 Accommodation

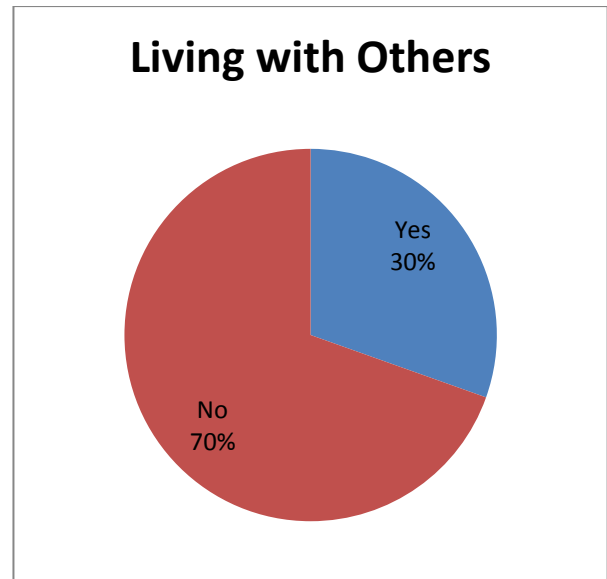


Figure 4.14. Living with Other Participants

Figure 4.13 indicates the types of accommodation that the participants were using while studying in the Foundation program. While some participants were staying in share houses and college dorms, the majority were staying in their own individual accommodation. This type of accommodation included renting their own properties and staying with a home stay family. Figure 4.13 indicates that a majority of the participants were in a living situation where they were not spending a majority of non-class time with other participants. Where participants were living together they would be spending a much greater amount of time together.

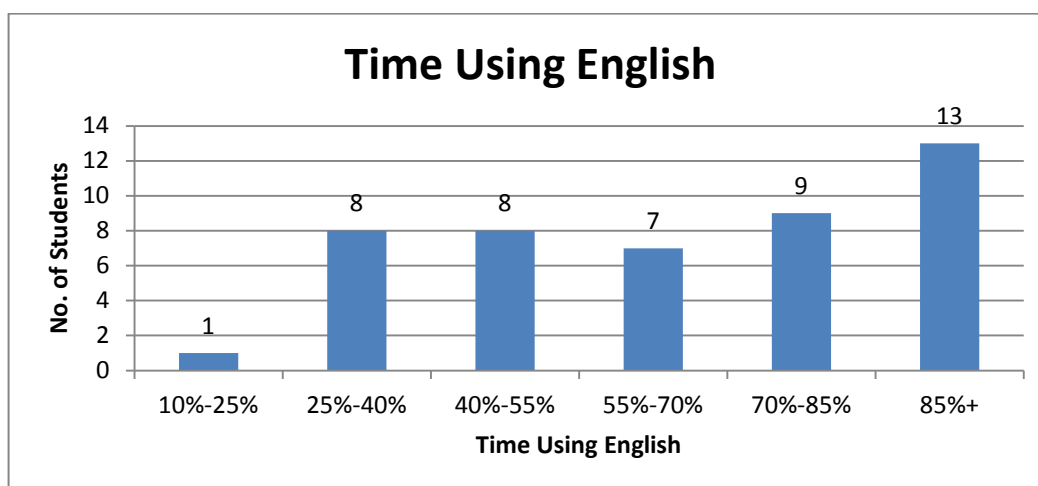


Figure 4.15 Time Using English

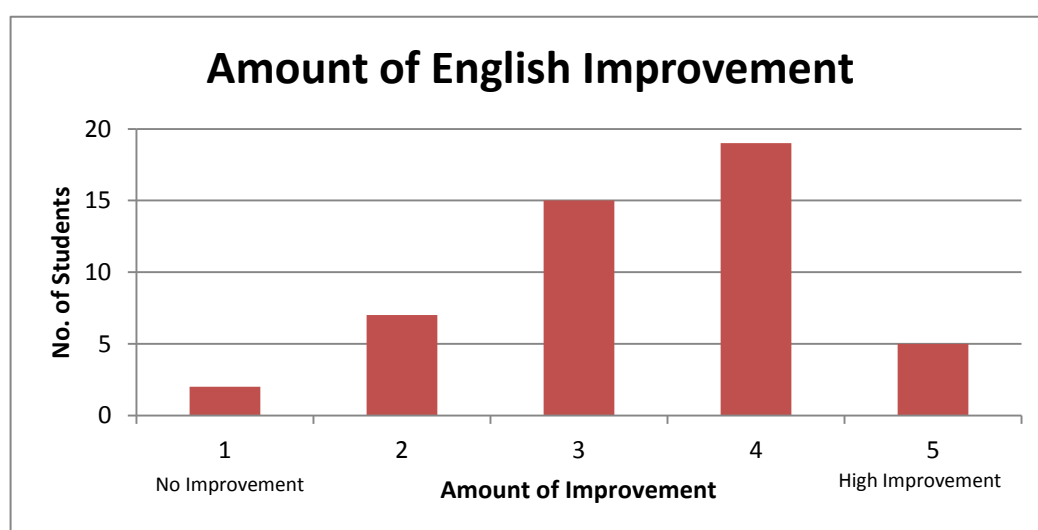


Figure 4.16 Amount of English Improvement

Figure 4.15 and Figure 4.16 show the responses from the participants self-reporting on their English language usage. Figure 4.15 examined the amount of time that each participant had spent using English since the Foundation Studies Program. As can be seen, the amount of time spent using English varied amongst participants. As all classes were conducted in English and English was the common language amount all participants, a high level of usage of English is to be expected. However, there was still a lot of time in which participants did not use English and as such would have been communicating in another language. Figure 4.16 is an indication of each participants self-reporting improvement in their English ability. Some improvement is to be expected given 'Academic English' is a compulsory unit of the FSP course for all participants. There was a general improvement overall in the English ability of the participants, which would have made it easier for everyone to communicate with one another.

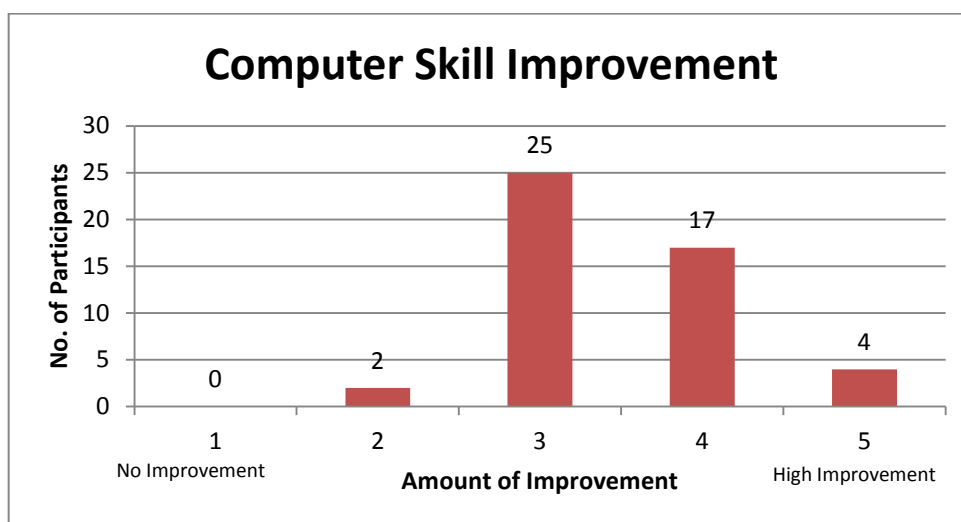


Figure 4.17 Computing Skills Improvement

A compulsory unit of the FSP course is the 'Computing Skills and Research Management' unit that is designed to improve the computing skills of the students. As the use of computers has become a common mode for interaction and communication, access to a computer is needed in order to access Facebook, a question was asked in regard to the level of improvement that each participant has experienced toward the use of computers. Figure 4.17 shows that participants indicated that they all improved to some extent in their use of computers.

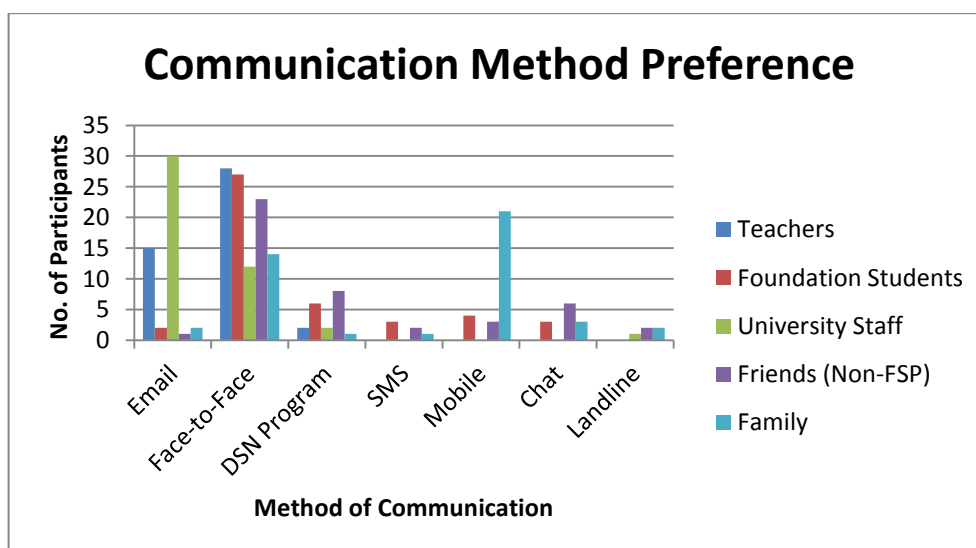


Figure 4.18 Preferred Mode of Communication

Figure 4.18 indicates the communication mode preferences of participants when communicating with different groups. As can be seen in figure 4.18, email was the preferred mode of communication used for more official interaction with teachers and other university staff members. This is not unexpected as email is the method that the university communicates with students and as such this would in turn influence students

to communicate in the same way. Face-to-face (F2F) is by far the most preferred way for the participants to communicate with all of the different social groups indicated. Teachers, other Foundation students, non-FSP friends and family all have higher levels indicating that a more personable mode of communication is preferred by the participants. The only variation were the lower levels of F2F between the participants and university staff which could be because of a lack of previous personal contact or because talking to teachers is seen as an formal method of communication part of how students interact with teachers. The use of a digital social network program, while not highly preferred, did indicate a preference for 'friend-to-friend' communication which may indicate that a digital social network is used more for non-formal, social communication and interaction. An outcome that stands out is the high preference for the use of a mobile to communicate with family members.

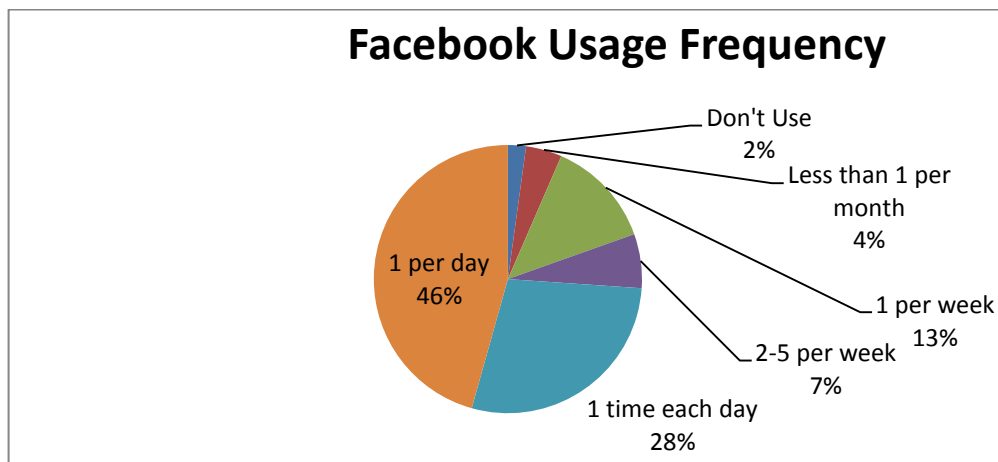


Figure 4.19 Frequency of Facebook Usage

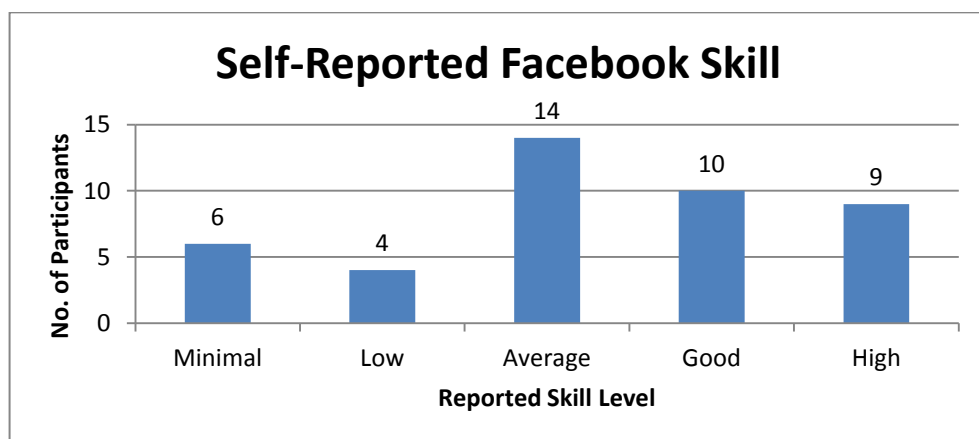


Figure 4.20 Self-Reported Facebook Skill

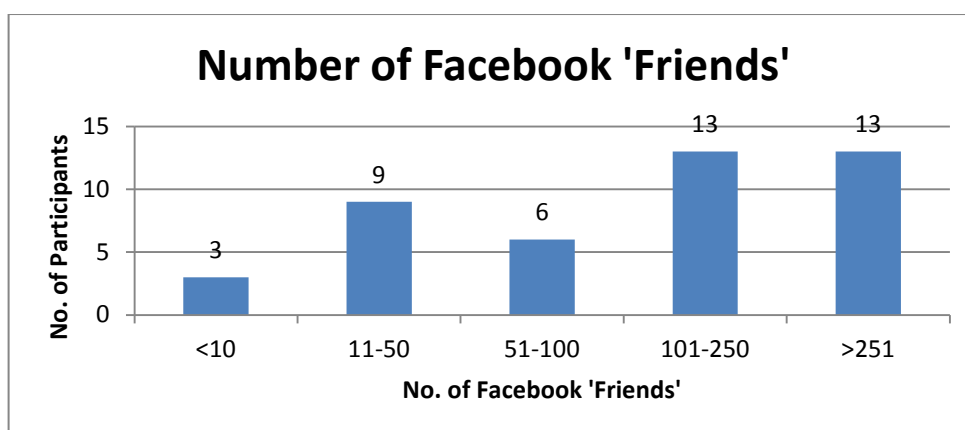


Figure 4.21 Number of Facebook Friends

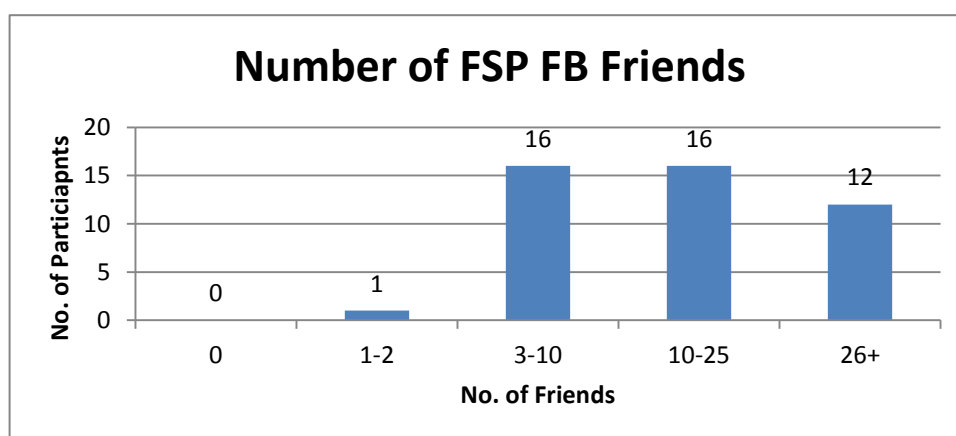


Figure 4.22 Number of FSP Facebook Friends

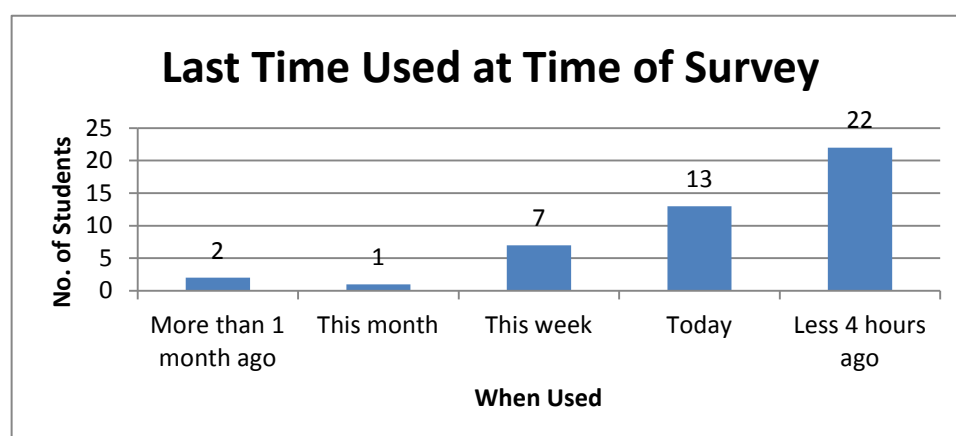


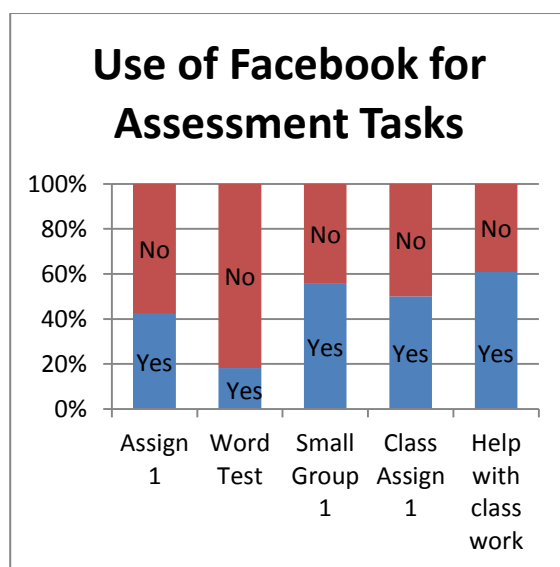
Figure 4.23 Last Time of Facebook Usage (at time of undertaking survey)

In the reporting of frequency of Facebook usage summary in Figure 4.19, many participants indicated that they used Facebook on a regular basis with most responses falling in the category of using Facebook every day. There were also six participants who indicated they used Facebook once per week.

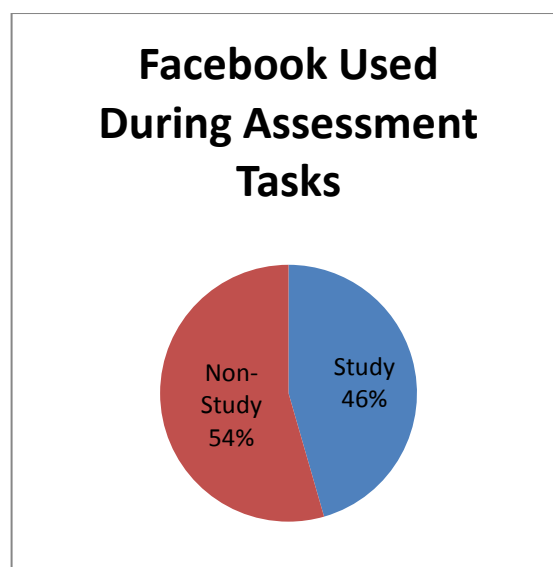
Figure 4.20 summaries data relating to Facebook skills shows an even distribution of self-reported skill levels by the research participants. The even spread of perceived skill levels in the use of Facebook with most grouping into the upper categories. There are a number of participants in the minimum and low skills levels; these 10 participants are equal to the 10 participants who were new to using Facebook (as indicated in Figure 4.11).

Figure 4.21 and Figure 4.22 are general indications of the number of Facebook friends that participants have, both in terms of general Facebook friends and Foundation Studies Program specific Facebook friends. As can be seen there is a range of reporting on the number of 'Facebook friend' across all participants with almost half of the participants having more than 100+ friends. Figure 4.22 breaks this down into a general indication of the number of FSP participants that are friends with other FSP participants. This diagram shows that there are a number of connections via Facebook however only 12 participants have more than 26 other participants in their Facebook friends list.

Figure 4.23 in shows the last time that each participant had used Facebook at the time of completing the second survey. 35 out of the 45 participants who answered this section indicated that they had used Facebook recently, at least some time during that day, with 22 reporting usage within the last 4 hours of completing the survey.



**Figure 4.24 Use of Facebook for Class Work (Yes/No)**



**Figure 4.25 Percentage of Time Facebook Used for Study Purpose**

The final set of figures created from the second survey data provide indications of the use of Facebook relating to study. Participants were asked about whether they used Facebook for the purpose of any of the assessments for the 'Computing Skills and Research Management' unit and also if they used Facebook for the purpose of undertaking any of the assessment tasks. Figure 4.24 shows that while Facebook was used for study task by the participants it was not used all the time and participants were just as likely to not use it as indicated in Figure 4.25.

#### 4.2.4 'After' the FSP Course Analysis

This section examined the data related to the time frame after the participants had completed the FSP course. The survey was undertaken approximately four months after the end of the course. This section deals with two time periods: during the 2010/2011 holiday period and after the start of the new 2011 university semester. This section primarily used data obtained from Survey 3.

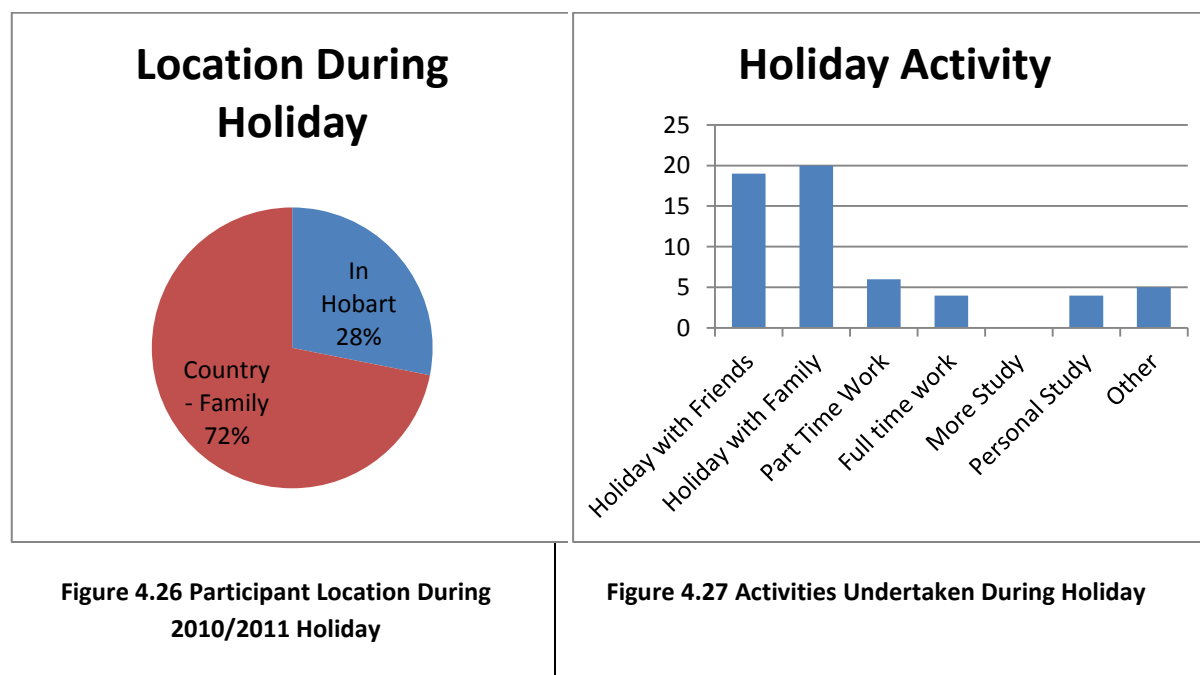


Figure 4.26 and Figure 4.27 provides an overview of the locations and activities undertaken during the 2010/2011 University holiday. As can be seen, a majority of participants went back to their families in their home countries while some students stayed in Hobart. Holidaying with family and holidaying with friends were the two most common general activities undertaken.

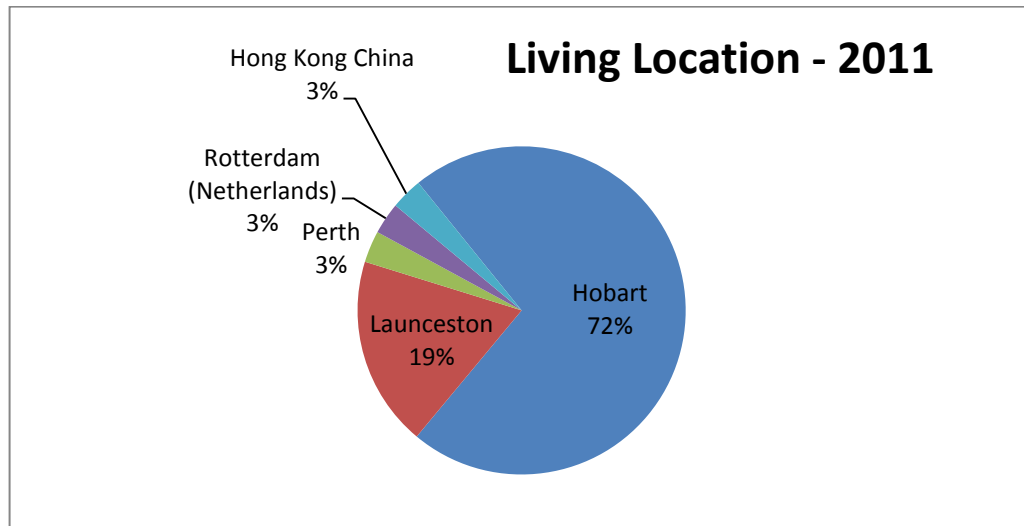


Figure 4.28 Living Location – 2011

At the commencement of the holiday period, participants were no longer required to stay in Hobart as the Foundation Studies Program had concluded. Of the 32 participants who answered this survey question, a majority (72%) were staying in Tasmania; 23 participants in Hobart and 6 participants in Launceston. These two cities are the primary sites for the University of Tasmania campuses and are likely to be the places where the participants had commenced their university degrees. There are also 3 participants that had moved to other locations.

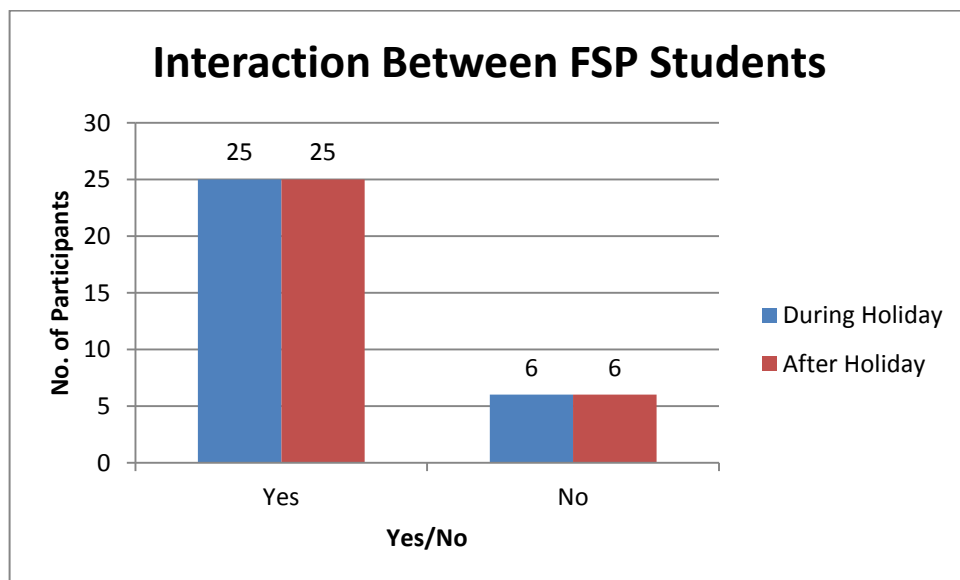


Figure 4.29 Interaction Between FSP Students



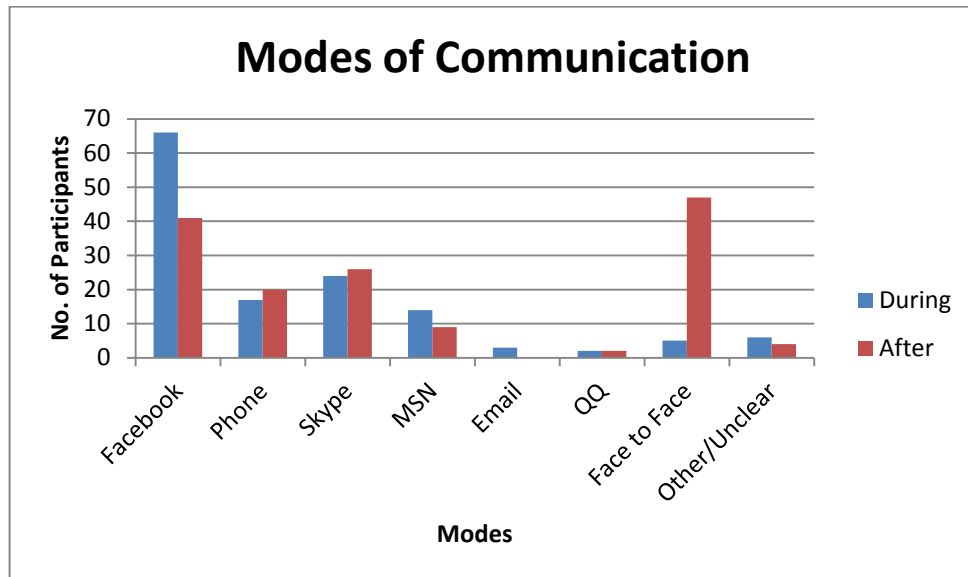


Figure 4.30 Modes of Communication

Figure 4.29 and Figure 4.30 summarise interactions between the participants. For this section and for both periods of during and after the 2010/2011 holiday, participants indicated who and how they had interacted and communicated with and by which primary mode. Figure 4.29 indicates that the number of participants who interacted with other participants both during the 2010/2011 holiday and the time after the first semester began showed no change. Figure 4.30 is an indication of the modes of interaction that were used both during the holiday period once the University semester one had commenced. This diagram shows all of the modes used by the participants in situations where more than one mode was used. While a range of modes were used what is interesting to see is that Facebook and F2F were the most popular modes for interaction to occur. 'During' the holiday period, the use of Facebook as a mode for interaction increased while 'After' there was a slight decrease in Facebook usage but a large increase in F2F interaction.

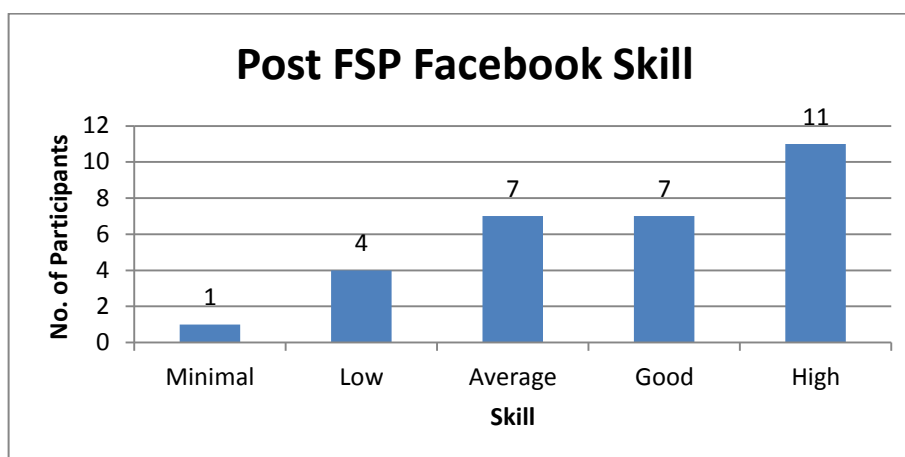


Figure 4.31 Self-Reported Facebook Skill (Post course)

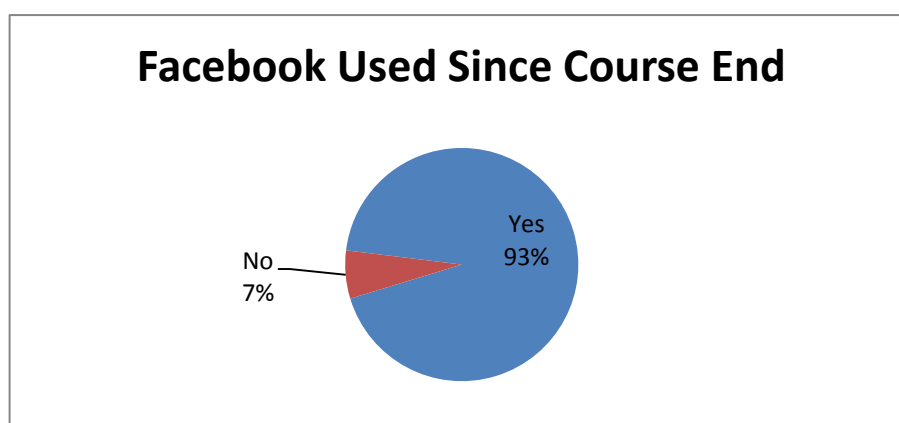


Figure 4.32 Facebook Usage Since FSP Course Conclusion

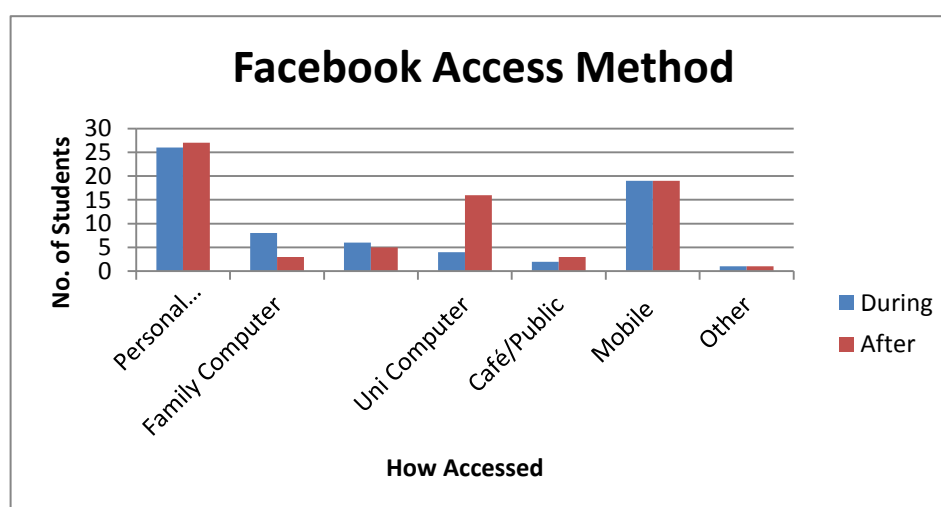
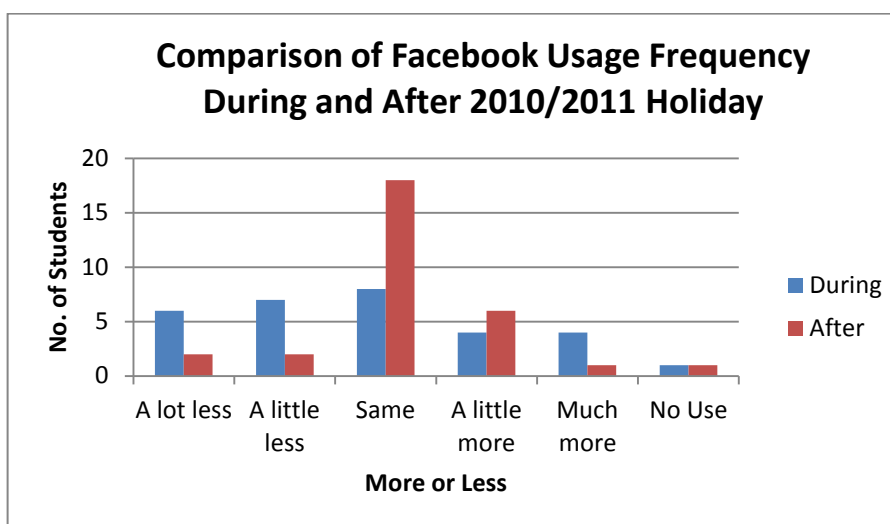


Figure 4.33 Method of Accessing of Facebook During and After 2010/2011 holiday



**Figure 4.34 Comparison of Facebook Usage Frequency During and After 2010/2011 Holiday**

Figure 4.31, Figure 4.32, Figure 4.33 and Figure 4.34 give overviews of the use of Facebook by the participants. Figure 4.31 is the self-reported post-course Facebook skill of the survey respondents. It shows that there is still a wide range of abilities in its use, even after a 32 week course where the majority of participants were using Facebook. The skill required to gain access and use Facebook is reasonably low. While advanced skills and usage are not essential to the basic interactions that Facebook allows.

Figure 4.32 shows that a majority of the participants who responded to Survey 3 indicated that they had used Facebook since the Foundation Studies Program had concluded. Only two participants indicated that they had not used Facebook, while 28 participants indicated that they had done so.

Figure 4.33 and Figure 4.34 demonstrates indications of Facebook usage, in terms of how Facebook was accessed and how frequently it was used. The use of a personal computer and mobile phone are indicated as being fairly consistent modes of access by the research participants during both of the surveyed time periods. Both of these access modes remained consistent notably the use of a University of Tasmania computer increased after the holiday period, as participants at this point in time may have commenced tertiary study at university and thus had convenient access. Figure 4.34 indicates the self-reported frequency usage during the 2010/2011 holiday and once the new university semester in 2011 had begun. Participants were asked to compare this usage of Facebook to their usage of Facebook while they were studying in the Foundation Studies Program. The diagram shows that overall usage of Facebook was the same or decreased during the holiday period but in the after period, usage was generally the same as it was in 2010 during the FSP course.

#### **4.2.5 Summary of Survey Analysis**

This section provided an overview of the selected research participant group in relation to their demographic make-up; their use of information and communication technologies (ICT) and Facebook; and their social connections before, during and after undertaking the FSP course.

From a demographic perspective, the research participant group was a diverse group of students comprising 13 different nationalities and was representative of the cultural breakdown of international students that study at the University of Tasmania. While all participants spoke a minimum standard level of English, this did not preclude the use of English in general interactions with other participants outside of the FSP class room environment. Primary language was the preference for interactions with others.

The participant group had a range of different abilities in relation to the use of ICT. While this was the case the participants were all capable in the use of ICT and had access to it as a mode of interaction resulting in ability and access not being factors in the use of technological systems for interaction. However, face-to-face interactions were the preferred mode by which the research participants chose to communicate with each other.

A majority of the research participants used Facebook over the course of the 15 month case study. Facebook was widely used before the commencement of the FSP course, and play a role in the social interactions of the participant group. There was no single reason why participants began to use Facebook, however it was frequently used over the course of the research. Geographic distance played a role in the frequency of Facebook usage, with a demonstrated increase in use during times when participants were separated from each other, followed by a decrease once geographic co-location was re-established.

Facebook was used as a tool during the participants study in the FSP course. However, as previously mentioned in Section 4.2.3, this use was dependent on the level of social interaction that was required for the tasks to be undertaken and Facebook use for group work tasks and general assistance was higher than for individual based tasks.

### **4.3 Social Network Analysis Diagrams**

This section will present the analysis of the created social network analysis. These diagrams were created by using the data from all three surveys. Survey two and Survey three were used to identify the connections between each of the participants while Survey one supplemented the diagrams by identifying the countries of origin. The surveys that were used to collect the data for the social network analysis diagrams can be found in the Appendix.

The aim of the second stage of data analysis was to develop a general graphical representation of the social connections that existed between the research participants at four different time points in relation to the Foundation Studies Program: Before the course began; during the course; during the holiday period after the course had concluded; and once the 2011 university academic year had begun. The survey data that was collected included a number of questions relating to the social relationships and interactions of the research participants before, during and after the FSP course. The answers to these questions were used to generate the social network analysis diagrams. The objective of the diagrams was to graphically represent the broad social connections of the participants over time. Once the diagrams had been created, they were then subjectively analysed to develop an overall picture of the relationships along with their use of Facebook over that time. The analysis approach was to examine the diagrams as a whole and as a collection of snap-shots over the 15 month case study. The individual connections were not examined as this was not the aim of this stage of analysis. Figure 4.35 is an example of one of the social network diagrams that were created. This particular diagram represents the social connections of the research participants during the FSP course.

Copies of the completed social network analysis diagrams are located in Appendix 2. It should be noted that diagrams

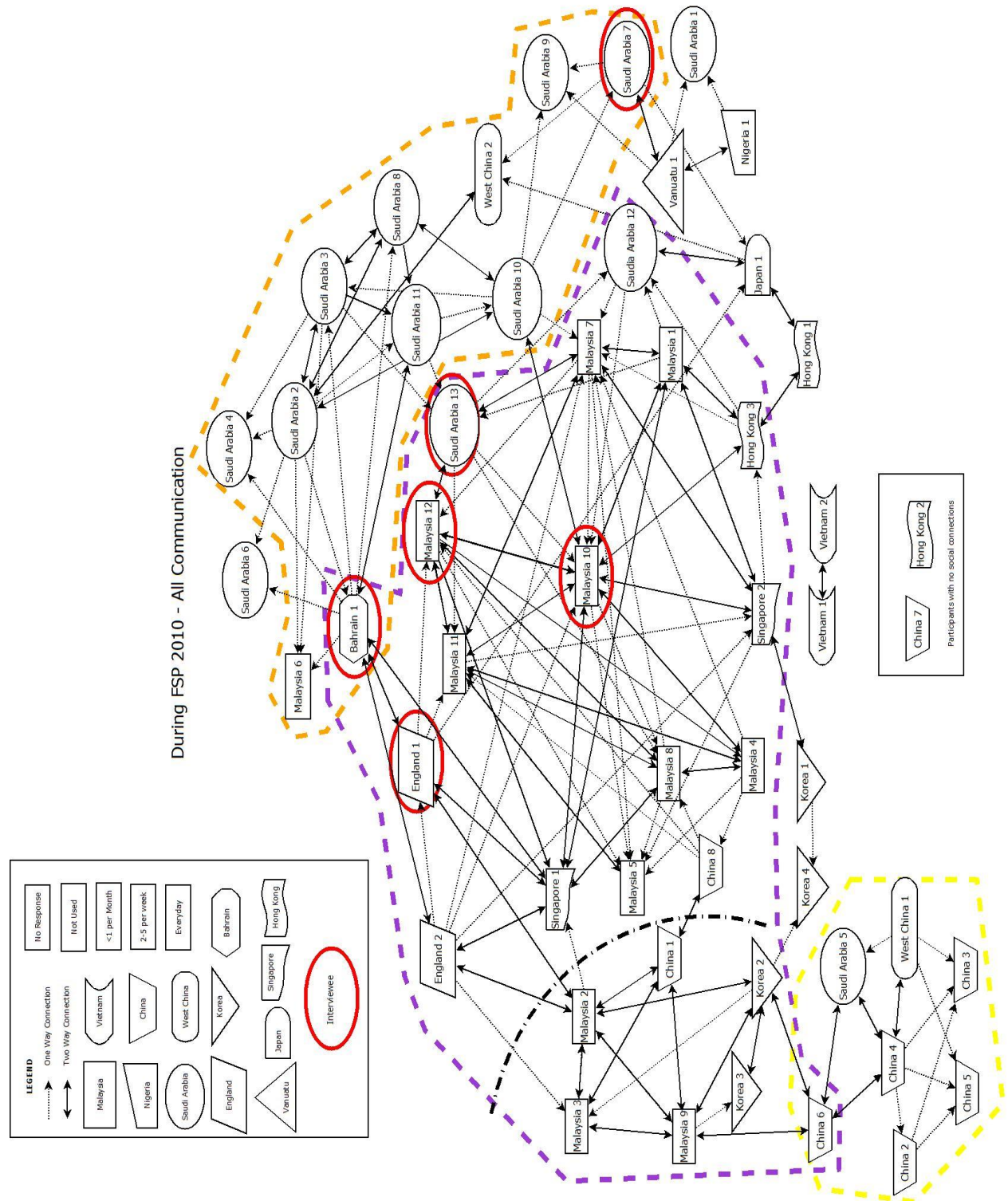


Figure 4.35 Connections 'During' FSP 2010

### **4.3.1 Connections Between Participants**

The initial data analysis examined the self-reported connections that were obtained from the undertaken surveys. These connections were formed by taking the participants' survey responses to a number of questions relating to their social interactions with other participants during the Foundation Studies Program in 2010.

As was covered in Section 3.7.1.2, the social network analysis diagrams were created under certain limitations that prevented them from being examined for factors such as strength, importance or frequency. As such, the social connections were examined from a higher level so as to present a broad picture of the connections that existed between the research participants.

While there were some connections existing between the participants before the FSP course began, a majority were formed during their time studying together. During this time, a vast majority of participants had formed connections with others however 'China 7' and 'Hong Kong 2' appeared to have isolated themselves from others as there were no indications of there being a connection between them and the other participants.

The number of connections increased during the Foundation Studies Program indicating that many of them were formed during the program and maintained after the program had concluded. These connections, specifically those connections once the program had begun, were numerous and far reaching with a high level of social interaction between the entire group during the program. Many of these connections were still present after the FSP course had concluded however there were also signs that some connections were starting to drop away.

The large spread of two-way and one-way connections is evident across all the social network analysis diagrams. This would indicate that the connections between the participants were diverse and not always reciprocal in nature. Two-way connections indicated that both participants had reported having a connection with the other while one-way connections only indicate that one participant indicated the existence of the connection.

It is difficult to confirm the exact decrease in social connections due to the reduced number of survey responses that were received the third survey. This drop off is due to the participants being more geographically dispersed and thus much harder for the researcher to contact. This restriction is more influential when examining the changes in two-way connections between the diagrams as the lack of a reciprocal response was recorded as there being no two-way connection.

Overall the diagrams indicated that there were a large numbers of diverse one-way and two-way social connections between the research participants over the 15 month case

study. What is most striking is that the numerous social connections that were in place during the FSP course strongly indicates that the common course of study undertaken by the research participants provided a situation and/or environment in which social interactions were possible and the formation of social relationships was probable. Also evident is the large number of both one-way and two-way social connections between the research participants. This would seem to indicate that, despite the group being relatively small in size compared to other University of Tasmania courses that can number in the hundreds, there was still a high level of complexity and diversity of connections between the participants.

#### **4.3.2 Clustering of Participants**

What could be seen in the creation of the social network analysis diagrams was some indication of clustering between the participants. These clusters have been created using a created set of cluster rules as indicated in 3.7.1.2

Overall there were 2 primary clusters present throughout the entire time period with another smaller cluster existing before and during the Foundation Studies Program. These clusters, while distinct, were not isolated from one another as there were some connections between the clusters. In some cases there being a few participants seeming to be bridging the clusters together. For example, during the study period in 2011, 'Saudi Arabia 13' and 'Saudi Arabia 12' were part of two clusters at the same time. While there were connections between them the analysis did not indicate that they were significant as most were only one-way connections or consisted of a single two-way connection.

Clustering generally occurred around similarities in country of origin and language. The three clusters identified around the languages of English (a primary language spoken in Malaysia, Singapore and England); Arabic (Saudi Arabia, Western China) and Chinese (China). There is some evidence of clustering based on other concerns; for example, 'Saudi Arabia 5' was part of the Chinese speaking cluster. This was most likely because of gender issues present in Saudi culture where interactions between men and women are not permitted.

#### **4.3.3 Facebook Influence**

A factor that was used in the creation of the social network analysis diagrams was the frequency of use of Facebook. As this research was examining the role that Facebook plays in social interactions, it was useful to add Facebook usage details into the network diagrams. This Facebook detail version of the social network analysis diagrams can be viewed in Appendix 2 where each of the four primary diagram collections includes a Facebook specific version.



As noted in Section 4.2.1, Facebook was widely used by the research participants. The social network analysis diagrams supports this pattern indicating that Facebook use increased over the course of the Foundation Studies Program and was used by a majority of the research participants. While the usage was high before the course began and while usage did increase, there is no apparent connection between Facebook usage and the social connections that were self-reported by the participants. There are some instances where a research participant was not a heavy user of Facebook yet still had a number of connections to other research participants; for example 'Korea 2' and 'Saudi Arabia 11' in the 'During' diagram in Appendix 2b.

Facebook usage was prominent and some of those who were not using it before the Foundation Studies Program began, did start using while doing the course. For example, 'Bahrain 1'. There were indications in the social network analysis diagrams where participants were frequent users of Facebook yet did not have many strong connections with other participants in the program, for example in Appendix 2b 'Hong Kong 2' who had no indications of connections with others, yet still indicated that they used Facebook every day.

#### **4.3.4 Changes Over Time**

The methodology collected and generated social network analysis diagrams for research participants over four time points: before the course began; during the course; during the holiday period after the course conclusion; and about six weeks into the 2011 university semester. Appendix 2 includes four series of diagrams indicating the social connections between the research participants at four time points, as discussed in the methodology in Section 3.7.1.2.

As can be seen from the social network analysis diagrams located in Appendix 2, the research participants had the strongest connections with each other during the Foundation Studies Program. These connections were numerous and almost everyone doing the course was connected to others in some way. After the course was concluded the number of connections stayed higher than before the course began, however some connections had disappeared. However, a lower rate of response to the survey makes it difficult for this to be taken as a certain outcome as many connections were still present. What is clear is that there were connections present after that were not present before the Foundation Studies Program began.

#### **4.3.5 Summary of Social Network Analysis Diagrams**

Overall, it appears that the research participants formed connections with other members of the Foundation Studies Program group and that these to some extent persisted even once the program had concluded. However, this was not the case for everyone, and while there were some participants who had a large number of wide

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ranging connections with other people, there were also some participants who did not have many (or in some cases no) self-reported social connections.

These connections were formed into clusters that are built around culture and language similarities, although there are exceptions, with some participants being able to be part of clusters that are outside of their native culture and language. These exceptions along with the large number of one-way connections that were present make it difficult to conclude anything specific in relation to the participants and their social connections over the four time periods.

The same applies to the influence of Facebook. The diagrams show that Facebook was widely used by the research participants and that its overall usage increased once the study course had begun. However, there is no strong indication that the level of usage of Facebook had any particular or intrinsic influence on the social connections. While Facebook most certainly had a role, its particular influence cannot be seen from the analysis. Greater indications of the role of Facebook in social connections may have been seen had individual participant activity been observed as part of the data collection process but this was not possible to undertake given the limitations placed on the research.

#### 4.4 Interview Analysis Using Thematic Coding

This section will present the results from the analysis of the semi-structured interviews. The interview analysis was conducted using ‘thematic coding’ which is designed to identify the key themes that are present in the interview data. This process is described in more detail in the Methodology chapter in Section 3.7.2. The analysis of the semi-structured interviews via the use of thematic coding generated three primary themes: interaction convenience; environmental influences; and relationship status.

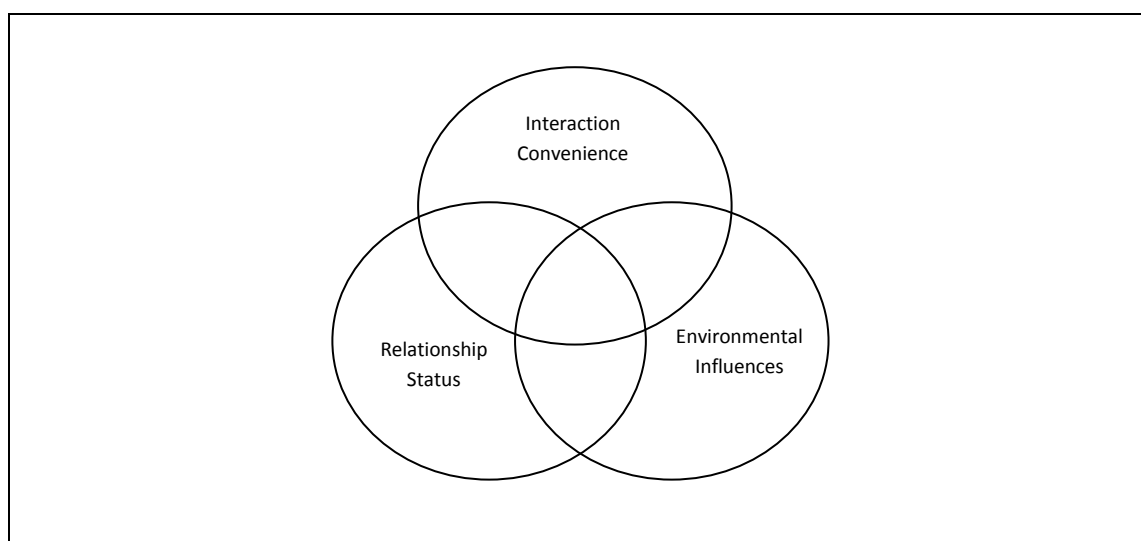


Figure 4.36 Diagram of Thematic Code Overlap

These three main themes that have been obtained from the analysis of the interview are individually presented below via the sub-themes that were generated and are used to support each main theme.

#### 4.4.1 Thematic Code One– Convenience of Social Interaction

The convenience of social interaction theme relates to how convenient the social interaction is between an individual and another person in their social group. The concept of convenience and the factors that influencing the convenience of a social interaction was a strong theme obtained from the interview analysis. This thematic code of ‘Convenience of Social Interaction’ is supported to some extent by all six of the interviewees. All of the sub-codes that form this broad theme play a role in whether or not an interaction is convenient along with how important convenience is as a factor.

<u>Thematic Coding</u>	<u>Sub Codes</u>
Interaction convenience	Geographic Factors
	Technical Ability
	Strength of Social Ties
	Tiers of Relationship
	Cost Factors
	Desired Type of Interaction
	Time Factors
	Accessibility
	Language and Understanding

Table 4.3 Interaction Convenience - Sub Codes

**Geographic Factors:** refers to the geographical and physical elements that both allow and inhibit interactions between people. It covers elements such as the opportunities that undertaking the FSP course and living together offered as well as the inhibitors such as the use of technological systems to overcome geographic distance. This sub-theme was strongly demonstrated by all six of the interviewees who readily identified that geographic factors played a strong role in the interactions with fellow classmates, friends and family. Interviewees C and F being key examples.

From Interviewee C. *Um, last year I was staying in the hostel with a few others (from FSP 2010), so. And they were studying foundation too, so... it made things easier.*

From Interviewee F. *Yeah, its (Skype) actually really really useful to communicate, especially because international calls cost a lot of money, so when we use Skype*

*and things, it is connected to many countries so you are not restricted to just one area. So another positive in the Skype is the location, no matter how far the people is.*

Interviewee C's quote indicates that living in close geographic proximity made interaction easier to undertake. Interviewee F demonstrates that Skype is a convenient method by which to communicate over geographic distance. The physical location had a strong influence on interactions as being closely co-located, both through study and living arrangements, made interactions convenient.

**Technical Ability:** refers to the technological based ability that is required to undertake interaction via the use of technological based means. Certain modes of interaction require a level of technical ability as a basis of use. Technology based modes such as Facebook and Skype are referred to here. This sub-theme was strongly demonstrated by five of the six interviewees with Interviewee C not identifying technical ability. Interviewees A and B were key examples.

*From Interviewee A. My Mum uses Skype, I mean my Mum & Dad's..... but when I went on vacation back to my country, I bought her a laptop and taught her how to use Skype. She just knows how to use Skype.*

*From Interviewee B. If with my sister I talk to her every day, text her on and off, Skype on and off, Facebook and twitter sometimes.*

The theme 'technical ability' referred to above is used to describe a base-level of technical ability that allows the participants to use the available technical means by which to interact with others. While technical methods of interaction are designed to be easily usable they do not guarantee that everyone can use them, especially in cases where technical ability or confidence is low. This code is not designed to evaluate a level of technical ability, only to show that a base level ability was present that allowed systems such as Skype and Facebook as viable technical methods of interaction. Interviewee A identifies that their parents needed to be taught how to use Skype before it could be used as a convenient method of interaction while Interviewee B demonstrates that a range of technical methods are able to be used between them and their sister

The technical ability of each person is a consideration in the convenience of the interaction. All technology based modes require some level of skill but once the ability is developed they become a convenient mode of interaction.

**Cost Factors:** refers to monetary factors which play a role in how interactions occur. Cost factors are often considered by international students studying overseas as money is a limited resource. Different technological modes of interaction are able to offer convenience and relatively low cost compared to other more traditional modes of interaction. This subtheme was demonstrated by Interviewees A, C, E and F. Of those,

cost with either a strong motivator in influencing a method of interaction, as seen in Interviewee F; or a consideration, as seen in Interviewee A.

From Interviewee A. *I still sometimes use Skype to communicate with my teachers, I do not add them, I just call them with Skype.... Sometimes it is cheaper than using the cell phone.*

From Interviewee F. *In Tasmania here generally, all the people they do not use the phone, it costs money I think; people are trying to save money so they tried to find an alternative way that is very cheap to communicate and better actually then here, this one.*

The cost associated with particular modes of interaction are factors considered when choosing how interaction will occur. Interviewee A and F are examples that specifically mentioned cost as a consideration. Modes such as mobile phones can offer higher levels of convenience in interactions however they have a higher cost associated with them.

**Desired Type of Interaction:** refers to how an individual wants to interact with another individual or group and the level of convenience associated with that form of interaction. All six of the interviewees demonstrated that they had social connections with others both inside and outside of their course of study and that the method of interaction chosen to be used was influenced by how they wished to interact.

From Interviewee E. *You get to chat to people, I mean your friends online and you can read a lot of other peoples comments and statuses, catch up on what they have been doing.*

From Interviewee D. *I think I found that email is much easier to express myself because when I go and went to see them, even if I am prepared, I have to just memorise all my talk when I go to see them otherwise I wouldn't know what to say, I wouldn't be confident because I do not really know them very well. So if I do not really know the person very well then I will just be not confident, I wouldn't know what to talk, I wouldn't know what to say.*

From Interviewee B. *Probably wider because like, if I haven't heard from someone in a long time it's just easier to reach out to them, send them a Facebook message instead of sending, you know, a postcard which could get lost half way. So, yep I think it is useful in terms of people I do not know, I'm not really close to. It helps to kind of keep them in check I guess.*

The mode chosen to use in interacting with others is based on how the initiator of the interaction wants to interact. The examples from Interviewees E, D and B clearly show that there is a strong consideration between the type of method used and level of convenience offered. Interviewee D and B specifically mention that particular methods

are 'easier' to use for some types of interactions. The chosen mode fits with what each person wants from the interaction process.

**Time Factors:** refers to the temporal factors that influence the convenience of the interaction, whether this is the desire for non-synchronous communication or direct one-on-one interaction. These time factors were demonstrated by five of the interviewees, with Interviewee A not mentioning time as an interaction factor. While mentioned by five interviewees, time factors were not strong themes and were more covered as an aspect in relation to being a convenient aspect of some methods over others.

From Interviewee E. *I do not like ringing people. It costs too much and they are probably asleep so they can reply whenever.*

From Interviewee C. *Let's say for example, on Facebook. If my Mum wants to send me a message and I'm not online on Skype, she can send it to me through Facebook.. and I can.....? (did not understand) come online...*

The convenience of certain interaction modes help to overcome barriers based on time. Interviewee E identified that 'ringing' people is costly and a possible disturbance to them while Interviewee C mentioned that Facebook messages allow them to be seen when convenient. Interactions often do not have to occur at the same point in time when both parties are available so asynchronous interactions have a level of convenience associated with them.

**Accessibility:** refers to the access that someone has to a particular mode of interacting whether it be due to the method's level of usage, or its availability to all participants in the interaction. This subtheme was generally demonstrated by five of the interviewees with Interviewee D's not covering this factor. Accessibility was not a strong theme among the interviewees.

From Interviewee A. I: *Yes. Like, when I was in China I had no Skype, so I had to wait until weekend so my Mum could call me, but now she can call me anytime she wants.*

From Interviewee F. *Actually, unfortunately my family, they are not really good with Internet because they are quite old and they do not care about technology I think... but my brother, he brings the laptop and I can see them.*

Accessibility is about having the technological system or mode available for use. Interviewee A identified that not having Skype accessible made interaction with their family more difficult to undertake and thus less convenient while they were in China. Interviewee F also identified accessibility issues when interacting with their family due to their lack of knowledge and how assistance is required. This is dependent on the modes being used by those interacting and being available in the geographic environment.

**Language and Understanding:** refers to the effect of language and understanding in an interaction. Language ability and self-confidence are important in forming an effective and convenient interaction. Different modes of interacting require different levels of ability to use with asynchronous interactions using text being different from real-time interactions using voice. The mode chosen for interaction can influence the level of understanding and can overcome issues relating to lack of confidence or ability. This was a strongly demonstrated theme among all six of the interviewees who represent a range of different language and cultural backgrounds.

From Interviewee D. *I think I found that email is much easier to express myself because when I go and went to see them, even if I am prepared, I have to just memorise all my talk when I go to see them otherwise I wouldn't know what to say, I wouldn't be confident because I do not really know them very well. So if I do not really know the person very well then I will just be not confident, I wouldn't know what to talk, I wouldn't know what to say. So I would just send an email to them.*

From Interviewee C. (in reference to a fellow students accent) *Um, in the very beginning, yeah. I found it a bit hard to catch what you are saying, but after that I got quite used to it.*

From Interviewee F. *I have struggled when I was with them, with Asian people, it is the accent because I do not know what they are saying and they do not pronounce the words very well and I found it difficult to understand but when I get to the people, the Australian people, I found they speak quite fast.....*

Interviewee D demonstrates that email was a much more convenient method of interaction with their teachers as it overcomes language ability allows the message to be delivered clearly. Interviewee C and Interviewee F demonstrate the time barrier that an accent can have in understanding what others are saying, a common aspect in multi-cultural environments. Understanding is important in interaction and the easier that interaction can occur the more convenient the interaction is.

#### **4.4.2 Thematic Code Two – Environmental Influences**

The environmental influences theme refers to the environmental influences that exist in the environment in which an individual is situated. These are the factors that in most cases are beyond the direct control of the individual yet play a strong role if they form social connections, whether or not those social connections continue in the future and whether interaction occurs. This thematic code of 'Environmental Influences' is supported to some extent by all of the interviewee participants.

<u>Thematic Coding</u>	<u>Sub Codes</u>
Environmental Influences	Social Environment
	Social Opportunities
	Educational Needs
	Social Support
	Social/Cultural Experience
	Method Popularity
	Need for Social Interactions
	Motivation and Focus
	Generational Differences
	Privacy and Information Sharing

Table 4.4 Environmental Influences - Sub Codes

**Social Environment:** refers to the environment in which a person is located, the social make-up of that environment and the social experience that a person has. The group of participants used in this research were part of a highly social environment with lots of interaction with other members of the class. All six of the interview participants strongly indicated that they had a positive social experience and that this impacted their overall experience while studying in the Foundation Studies Program.

From Interviewee F. (Do you miss Foundation 2010?) *Ah, seriously yeah! Studying in Foundation is fun actually. You do not take it as seriously as University; at the same time you can enjoy and you can go with friends and meet but in university it is something else.*

From Interviewee B. (Do you miss Foundation 2010?) *Yes!, I miss it tremendously! In terms of the closeness with friends, I mean you go through the same things; while at Uni you... there will be some people that you meet that will share only one unit with you or two units. You rarely meet people who take all the same units as you do.*

From Interviewee D. *...like I said, in Uni it was hard for me as I would not normally start a conversation, I will be quiet all the time, especially with people that I do not know, so when I go to my class I will just sit and be quiet and leave the class, especially when I do not have friends so I will not talk to anyone next to me.*

From Interviewee C. *It's probably almost the same, but maybe it is because last year there was a smaller group of people, so you get to talk about stuff more easily than in Uni where you get lots of people in the lecture theatre.*



The Foundation Studies Program offered a highly social environment for the students in that the participants were located in the regular university environment differing in that the social environment is much more varied. Interviewee F and B gave very strong indications that they missed undertaking the Foundation Studies Course and that it was the social environment that was one of the primary reasons for this. Interviewee D and C gave a slightly different perspective in that the study course provided an environment that made social interactions easier to undertake.

**Social Opportunities:** is an extension on the previous social environment code but differs slightly in that this code refers to the social opportunities that are or were available to the participants while studying Foundations Studies 2010. These can come from educational activities (such as group work), free time opportunities between classes and the free time after classes and on weekends, as well as from living together. All six of the interviewees indicated that the Foundation Studies Program provided them with opportunities to interact with one another both during and outside of class time.

*From Interviewee D. Yeah!! In group work, yeah it is easier to get to know each other but then in Foundation I got something in group work I can do it but in Uni, the problem now in uni I haven't had any group work so far.*

*From Interviewee F. Um..... actually we have done several activities, like some people's birthday for example. Like \*person\*'s birthday, we went there hang out with them. We have seen some students there, we have done some other activities, like BBQ's sometimes, going to Bruny Is.*

*From Interviewee B. Um..... I guess you would go out and eat sometimes and like..... actually we did not do much extracurricular activities, um... it was mostly just talking together on Skype... because we all stuck together anyone and the one's who are were really close, we all stick together anyway so... I think the extent of the stuff we did was going to the Royal Hobart Show, going to K-Mart, going to Coles on our weekly shopping trip....*

Educational priorities and educational workload have an influence and can be considered barriers to social opportunities that help to develop and reinforce social connections between the participants. Interviewee D identifies the social opportunities that studying together provided through activities such as group work while interviewee F and B identified the opportunities outside of class time that provided social opportunities.

**Educational Needs:** refers to the educational and learning assistance that the participants had. At the time everyone was studying in the Foundation Studies Program so there were times where assistance with the workload was needed. All of the interviewees indicated that the Foundation Studies Program required them to seek out assistance from each

other. This was a strongly indicated need and that getting assistance, while not dictated was helpful. During these times social connections were utilised to gain assistance.

From Interviewee B. *...most of us who stayed in the hostel together if we needed help we would just run up to their room and like 'tat tat tat' 'Help! I need Help! Help me to proof read some stuff' 'Print stuff out for me' that kind of stuff so, like, studying together in the dining room was what we did last year in the hostel. So, I think it did help academically to a certain extent.*

From Interviewee D. *Yeah, I think because if I need help they will help me, if they need help I will help them. So, we just have like, because, we will always encounter some problem with our studies so we need someone to help us, yeah, we need someone to help us, yeah.*

The seeking and giving of educational assistance during the Foundation Studies Program also offered an opportunity for social connections to be created and reinforced. Interviewee B and D both indicated that there was a need to seek assistance from others as well as interviewee D specifically mentioning that they were willing to provide assistance when needed. The environmental factors did play a role in this, for example living with other students creates an environment in which this educational assistance can be more easily accessed.

**Social Support:** refers to the social support structures and needs that each individual has. This includes the support they get from their fellow classmates and the social and emotional support they receive from family and friends who may not live close by. All six of the interviewees gave indications of the social support and benefits that they received from other students while studying in the Foundation Studies Program. Interviewees A and B specifically mentioned the difficulties associated with studying away from family and friends while the other interviewees gave indications of the specific benefits derived having social support from each other.

From Interviewee A. *I: Just makes everything closer to each other. Like, I do not feel I'm away from my family if I see them and talk to them every day.*

From Interviewee B. *Yeah, definitely. Otherwise I would just spend all my nights crying into my bed sheets but its definitely easier for knowing what is going on at home. My parents can call me and tell me my grandma is in the hospital – that kind of thing. So, it definitely helps to put my mind at ease.*

This social support that is received is important for participants and it is the technological system that allows the geographic distance to be bridged between a participant and their support network of family & friends. While only interviewee A and B gave strong indications of the negatives of being away from their family they are the clear examples

of what many international students would go through when coming to Australia or other country to study.

**Social/Cultural Experience:** this refers to the social and cultural experience of the individual in relation to how that assists/prevents interactions with others. Interactions between individuals of differing cultural and language backgrounds can be problematic as cultural norms play a strong role in how interactions occur, for example what is considered suitable physical contact. All six of the interviewee indicated that their experiences were influenced by cultural factors.

From Interviewee F. *Yeah, they didn't know about it and especially with the greeting actually. I have been in situations especially in some countries where the women come up and give you a hug. I'm not really used to it. I have found it like... because in my country, we are not allowed to hug anything thing like this so I'm... Um... for this reason I do believe and that it is right, I'm actually happy the way that we do it but after time where some they come and give me hug, I'm like 'oh my god! What am I supposed to be doing?'*

From Interviewee D. *I don't think so because I studied in Malaysia too for a year, so most of my classmates and group mates in Foundation were from Malaysia/Singapore so they almost have similar culture and so I already know how to deal with the problem that I would have.*

This code provides an indication of the role that social experience plays in the interactions and relationships between those of differing cultural backgrounds. Interviewee F provides a key example of a cultural issue that can occur when a simple greeting is undertaken and there is a vastly different expectation for physical contact and distance. Interviewee D however, provides an example of cultural experience playing a role in assisting them in interacting with others and expecting & avoiding cultural problems.

**Method Popularity:** refers to the popularity of the particular mode of interaction and how that plays a role in how interaction occurs. The mode of interaction used to interact depends on the modes of interaction used by others who are involved in that activity. All six of the interviewees had indications that the methods of interaction they used were dependant on methods used by those they wished to interact with.

From Interviewee B. *Probably not because everyone is already on Facebook Friendster is pretty much null, as is MySpace so Facebook the prominent social network that everyone is just jumping on the bandwagon.*

From Interviewee E. (when communicating with teachers) *Um, well I normally use the University's email, or if they are on Facebook I will send them a message or a comment or a... email like thing in Facebook.*

From Interviewee C. (when communicating with teachers) *In Foundation, um, I did communicate with them Face to face and through emails as well but... in Uni, I rarely speak to them face to face, if I have any questions then I will just email them.*

As can be seen in the above interview extracts, there are also certain expectations that play a role in the mode used to interaction with email being used for formal communication (although not exclusively). Interviewee B indicates that the wide usage and popularity of Facebook is a reason to be using it as a method of interaction. Interviewees E and C indicate a similar theme but with a greater focus on the method used being based on those used by whom they wish to interact with.

**Need for Social Interactions:** refers to the desire or need for one person to interact with other people. All six of the interviewees identified a strong social aspect to their time studying together in the Foundation Studies Program. Meeting this need became the routine during the Foundation Studies Program.

From Interviewee F. *Ah.... Mm.... not really. I would say some people they are really strict about their culture but for me it is about learn about culture. I have heard from some people that they have difficulty but I say 'nah, I do not have it' because for me it is something different. I would like to meet new people, I would like to learn, I would like to see.*

From Interviewee A. *I: Yes. We did in fact. I used to live in Christ College which is on campus and \*name\* used to come to class and once she was done she use to meet me in Peppers for coffee or lunch or something.*

From Interviewee B. *Yeah, like the other day, \*name\* and I had a conversation about what life would be like without Facebook and we realized it would be soooooooooo difficult to keep in touch with people in general as opposed to relying on our phones only or Skype. Because Facebook, you can stalk people online so you know its good! (ha ha)*

While study is a driving factor for each participant completing the program, there is a strong social element present as well that influences actions and behaviours. Interviewees F specifically identified that they like to be social with other people while interviewee A and B specifically mentioned incidents where social interaction was sought

**Motivation and Focus:** refers to the implicit motivations of participants coming to Australia and where their overall focus lies, be it purely academic or more of a social or language focus. This particular theme was identified to some extent from interviewees A, C, D and F. These interviewees specifically discussed particular aspects relating to their activities while studying in the Foundation Studies Program.

From Interviewee A. *I: Yes. I mean, whenever it comes to a group desk, I always seem to be the leader and make sure everything goes alright.*

From Interviewee D. *Um... I'm still considering to move to a group of 8 university because I found engineering here is just as difficult as studying in a group of 8 university, there is not much difference in units. Maybe the exam would be a little harder, so now I am considering to study in another university.*

From Interviewee F. *No, no, actually before I came I have used several ways to improve my English. I have stayed with a share house since I came here, for 6 months, and after that I have decided I couldn't communicate with other people, I couldn't break the ice with other people because I did not know how to say because Australian culture is completely different from mine. It is absolutely different (he he). And then I decided to learn this culture so I went to live with home stay. I stayed with home stay for almost 8 months I guess.*

Through the interviews it could be seen that all interviewees had implicit reasons for studying in the Foundation Studies Program which went beyond the program itself. Interviewee A and D indicated that they had a 'study' focus as a driver to studying in the Foundation Studies Program. Interviewee F however indicated that social and language practise were their primary focuses.

**Generational Differences:** refers to the differences that exist between members of different generations. From this project it was the differences between the interviewees and the members of their family. The differences relate to the use of technological systems to communicate as well as the desire to have some separation between what is shared with family members and what is shared with the members of the same social group. Interviewees A, B, E and F made specific mention of the generational difference that exist between themselves and other members of their family.

From Interviewee E. *I work with them, live in the same house as them; they all also have Facebook except my little brother and dad because they do not know how to use technology and my little brother is too young to have it anyway.*

From Interviewee B. *Um.. I guess my parents. They keep reminding me all the time 'be careful of what you put on Facebook' that sort of thing; and also more and more my family members are getting Facebook, well, my granddad... there are some things you do not want them to know otherwise they will come back to my parents and 'did you know that your daughter did that? Did this, did that? Went out with this person?' and I do not feel comfortable about them talking about me without me knowing it.*

These differences in generations are not always about barriers but they do play a role in the consideration with how interaction occurs both directly and indirectly. As indicated

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by interviewee E and B, parents and younger siblings have different opinions and abilities in regard to the types of behaviours and abilities that are present.

**Privacy and Information Sharing:** refers to the participants' awareness and concerns in regard to their privacy, what they share and the possible consequences that can occur when sharing in a public space. Interviewees A, B, D and F specifically identified privacy and information sharing factors as being part of their behaviours.

From Interviewee B. *Probably once its there, people see it and remember it so if for example you post an embarrassing photo and it stays up long enough for people to see it.. even if you remove the tag or.. people will still suss you about it or... personal things like your relationship status. If you change your relationship status and you leave your privacy settings on normal everyone can see it, everyone can... like it, they will comment on it 'whose the guy?' 'how long for?' that kind of thing and if you become single, same sort of thing.*

From Interviewee D. *Mostly Skype or mobile phone but sometimes I use Facebook for pictures so I just upload the picture and they can see them. I just upload and put the privacy for just them to see it.*

From Interviewee F. *Ah, well.... The worst thing is I have met... when you have relationship with a girlfriend and your girlfriends says to you 'ok, look, put the relationship in Facebook' and after a while you break up and delete it.... Yeah and as I said 'this is not supposed to be in' I have regret to have to put my relationship in last time, it's not good.*

The interviewees seemed to be aware of the role of privacy and that their sharing of certain types of information needs to be considered. Interviewee B and F discussed aspects to their sharing online and how that behaviour has an influence on their behaviours. Interviewees D identified their behaviours in regard to limiting who they share with, specifically in regard to Facebook.

#### **4.4.3 Thematic Code Three – Relationship Status**

The relationship status theme refers to the relationship status that an individual has with another. The type of relationship they have and the factors that influence the relationship are covered by this theme and determine both if the relationship exists, the strength of the relationship and the way that interaction occurs.

<u>Thematic Coding</u>	<u>Sub Codes</u>
Relationship Status	Strength of Social Ties
	Generational Differences
	Tiers of Relationship
	Desired Type of Interaction
	Social Experience

Table 4.5 Relationship Status - Sub Codes

**Strength of Social Ties:** refers to the strength of the social ties or relationship that exists between two people who want to be or are interacting. It identifies that the social relationships that exist between two people vary with some connections being strong while others being less so. This theme was strong amongst all six of the interviewees who specifically identified aspects relating having social relationships of different types with the other Foundation Studies Program students.

From Interviewee D. *I was very very close with \*name\*, I was very very close with \*name\*, \*name\*, but then also... because I do not know who is low and who is high I was close to \*name\*; \*name\* is one of my best friends here in Australia. Even if he is in Launnie, but we meet at least once a month or twice a month.*

From Interviewee B. *Um.... In \*name\* case it was kind of personal because she had something against me, she did not like the way I do things. She did not like my voice. And yeah, I do not really know why she did not like me but if someone is going to dislike me why should I make an effort to like them back? And \*name\* is..... oh god! You knowwww. Always asking questions um... pissing everyone in class off, disrupting class, pissing our lecturers off, just basically pulling the entire class to a halt. Really, just like stopping everyone else from learning useful stuff.*

Connections can have differing levels of strength, how interactions occur, when interactions occur and how the social connection changes over time can all be influenced by this. Interviewee D and Interviewee B offer examples of these differing strengths of relationships with Interview D example focusing on the positive relationships and Interviewee B the negative relationships.

**Generational Differences:** refers to the differences that exist between members of a similar generation and those of another generation. This was a broadly identified theme in four of the interviewees, interviewee A, B, E and F. These differences can play an impact on how interaction occurs and the level of comfort in using a particular method.

From Interviewee B. *My parents do not use Facebook, thank god! (said in slightly quiet voice) I text them all the time, every other day and they call me every week, so whenever my sister is home with my parents we Skype.*

From Interviewee E. *I work with them, live in the same house as them; they all also have Facebook except my little brother and dad because they do not know how to use technology and my little brother is too young to have it anyway.*

The issues with family members (particularly parents) using Facebook as being an unwanted type of interaction is interesting as the medium allows sharing to all, but the desire to share that same information with parents is not the same. Interviewees B and E give examples of how different generations of family approach the use of different types of technical methods of interaction.

**Tiers of Relationship:** refers to the different types of relationships that the interviewees have with the people around them. Again, this was a broader identified theme among all six of the interviewees. The relationships and expectations are different and the level of interaction desired differs.

From Interviewee B. (In relation to a question about their parents' possible usage of Facebook) *You have no idea! I mean I would definitely feel very um... I'd feel like my privacy has been somewhat intruded you know because they can just use it to check up on me and you know that I can adjust my privacy settings on Facebook sure but the fact that they are still there and they can Facebook stalk me whenever they want. So it would be a bit worrying.*

From Interviewee C. (In relation to keeping in contact with someone) *It's not really a distance thing. I mean, I see him coming online every day.. I bet he sees me coming online every day... But.....*

It was clear that the types of relationships differ and the tiers indicate how interaction occurs and what type of interaction and sharing is undertaken between different people in the same social space. Interviewee B identifies the differences of a family based relationship and the associated expectations while an excerpt from interviewee C relates to a relationship between the interviewee and another of the Foundation Studies Program participants.

**Desired Type of Interaction:** refers to how an individual wants to interact with another individual. All six of the interviewees expressed a desire to interact with others in a range of ways. The mode and form of interaction depends on the nature of the relationship and the developed norm with how interaction with another person or group has developed,



From Interviewee D. *Maybe Skype but I think Facebook is easier, Facebook is.. email is like a more formal way to contact, Facebook is just like 'oh! - friends, friends, friends; we are friends'.*

From Interviewee B. *Um..... I guess you would go out and eat sometimes and like..... actually we did not do much extracurricular activities, um... it was mostly just talking together on Skype... because we all stucked together anyone and the one's who are were really close, we all stick together anyway so... I think the extent of the stuff we did was going to the Royal Hobart Show, going to K-Mart, going to Coles on our weekly shopping trip....*

From Interviewee D. *I think I found that email is much easier to express myself because when I go and went to see them, even if I am prepared, I have to just memorise all my talk when I go to see them otherwise I wouldn't know what to say, I wouldn't be confident because I do not really know them very well. So if I do not really know the person very well then I will just be not confident, I wouldn't know what to talk, I wouldn't know what to say. So I would just send an email to them.*

The desired type of interaction is determined by each individual as an in-depth face-to-face interaction may not be what is wanted or desired. Interviewee D expressed how a range of different methods of interaction are used depending on how they wish to interact with others, from Facebook to Skype to email. Interviewee B is an example of the face-to-face interactions that were desired and undertaken.

**Social Experience:** refers to the positive, neutral or negative experiences that an individual has in a particular social situation. In this research it was the social experience that the interviewees had while studying in the Foundation Studies Program. Having a positive experience while completing the course is to some extent related to the social interactions and the social relationships that were formed. Five of the interviewees strongly indicated that they had a positive social experience while studying in the Foundation Studies Program.

From Interviewee B. *...In terms of the closeness with friends, I mean you go through the same things; while at Uni you... there will be some people that you meet that will share only one unit with you or two units. You rarely meet people who take all the same units as you do.*

From Interviewee F. *Ah, seriously yeah! Studying in Foundation is fun actually. You do not take it as seriously as University; at the same time you can enjoy and you can go with friends and meet but in university it is something else.*

The positive social experience / positive social environment will promote the development of social relationships. The examples from Interviewee B identify the common experience that all the Foundation Studies Program participants went through

while studying together. Interviewee F provides an example of a common theme relating to the positive social experience that they had while studying.

#### **4.4.4 Summary of Interview Analysis Using Thematic Coding**

This section provides an analysis of the semi-structured interviews undertaken in stage two of the data collection methodology. The interviews were analysed using thematic analysis that identified the three main themes to emerge from the analysis. The three themes that emerged from the analysis of the semi-structured interviews were: 'convenience of social interaction', 'environmental influences' and 'relationship status'.

The interaction convenience theme is based around convenience and the factors that influence whether an interaction between two people is convenient or not and the amount of effort that is willing to be used to interact. The lower the convenience then the more time and effort is required while high convenience will encourage and allow interactions more freely.

The environmental influences theme relates to the influence of environmental factors that influence the need to interact. Environmental factors can be geographic but they can also be situational as there are times when interaction is desired or required. In essence, the environment can provide both motivating factors and inhibitors to social interaction.

The relationship status theme takes into account the relationship that exists between two people and how the strength of that relationship influences the amount of time and effort that will be put towards undertaking an interaction. The stronger a relationship is between two people then the higher the chance for an interaction to occur.

All three factors work together in the choice to interact, how that interaction will occur and the amount of time and effort that will be put forth toward initiating and undertaking an interaction. For example two people with a strong relationship will be willing to make a greater effort toward interaction even when the environment and convenience factors are working as inhibitors. Likewise, convenience needs to be high if two people with a weak relationship are to interact with each other.

### **4.5 Comparison of the Contributions of the Three Analysis Methods**

This section provides an overview and comparison of the contributions from the use of the differing methods of analysis. The research used three different approaches to the analysis of the obtained data. The survey data was used to generate descriptive statistical overview of the research participant group; and was analysed using social network

analysis that led to the creation of a series of graphical representations of the social relationships that existed between the research participants. The semi-structured interview data was thematically analysed to generate a series of themes that provide more detail in regard to the social interaction of the research participants.

The descriptive statistics analysis approach allowed a broad demographic overview of the research participants to be obtained. The analysis covered a wide range of factors including technical ability, social activities, living arrangements, educational aspects, interactions with other participants and the use of Facebook. The strength of using this method is that it allowed data to be collected from the entire research participant group over the course of the research study. By using a survey tool, a broad range of data was able to be obtained from each of the participants in a timely and repeatable manner. However, the primary weakness of this particular method of data analysis is that it lacks the detail that more specific qualitative methods offer. While trends and facts were able to be obtained, the more in-depth analysis was not able to be undertaken using this method alone. This analysis of the descriptive statistics led to the generation of a number of charts that graphically displayed the characteristics of the research participant group as a whole but overall lacked the in-depth detail that was sought from the research participants. In order to obtain this greater detail, additional analysis methods were used.

The social network analysis used the collected survey data to generate a series of social network analysis diagrams. These diagrams graphically displayed a representation of the social relationships that existed between the research participants over the course of the 15 month case study. The diagrams included the connections between individuals, the direction and type of connection, the broader clustering within the participant group and an overlay of the frequency of use of Facebook. The strength of using this particular method is that it allowed the generation of graphical representations of the social connections that were present in the research participant group. The social connections of the research participants could not be identified using descriptive statistics alone and needed this specific approach to be able to identify the connections that existed over the course of the research study. However, the weakness of this method is that it does not give detail as to why the connections exist or what factors are at play. This approach generated a number of social network analysis diagrams that clearly represented the social connections at four key time points in the study of the research participants but not the detail needed to better understand the fundamental factors influencing these connections.

The thematic coding analysed the undertaken semi-structured interviews and provided a series of primary and sub-themes relating to the social interactions of the research participant group. The key advantage of this method is that it allowed more detail to be obtained regarding the social connections that were present in the previous stage of data analysis. The survey was able to present an important overview of the research

participant group and their social connections but it was the thematic analysis of the interview data that generated more in-depth detail regarding what influences were at play between the students of the Foundation Studies Program. The interview approach however, is too cumbersome to be used as a method to obtain data required for a holistic overview of the participant group and hence was used as a third approach to data analysis. The primary and sub-themes presented a more detailed overview of the factors influencing the interactions between the participants during the 15 month time period of the case study. This allowed the use of Facebook to be better understood in relation to their social interactions.

Overall, the three approaches to data analysis: descriptive statistics; social network analysis; and thematic coding; created a better understanding of the social relationships and social interactions of the research participants in the context of the use of Facebook. By using these three separate analysis methods to analyse the collected data, each was able to provide an important aspect of the analysis. The descriptive statistic provided an overview of the participants, the social network analysis created a visual representation of their social connections and the thematic analysis of the interview data provided more in-depth detail of the factors underpinning the social connections. By using three methods the weaknesses in each method were able to be overcome and a stronger picture in relation to the aims of the research was able to be achieved.

## **4.6 Chapter Reflections**

This chapter presented the results of the analysis of the research data collected via the survey and semi-structured interviews. There were three different analysis techniques used and each was presented individually and independently.

The first approach to analysis was the use of the survey data to create a series of descriptive statistics that were designed to give an overview of the participant group from a range of perspectives before, during and after the participants had studies in the Foundation Studies Program. This approach to analysis gave detail about the participant group in relation to their study, living location, use of technological systems, English language ability, use of Facebook and activities undertaken.

The analysis of the survey data identified some key aspects relating to the Foundation Studies Program participant group. First, from a demographic perspective it clearly showed that the participant group was diverse with individuals coming from a wide range of countries and having differing cultural and language backgrounds. It also indicated that while they had English as a common language, they preferred to use their native language in interactions when possible. Secondly, the technical abilities of the participants were not a barrier in their use of technological methods of interaction

though overall face-to-face interaction was the preferred way of interacting. Thirdly, Facebook was widely used within the participant group yet there was no one primary drive for choosing to use it. However, there was a marked increase in use by the participants during their time studying together. Finally, Facebook was used as an interaction tool in their studies with a preference for its use in group focused tasks.

The second approach to analysis was the creation of a series of social network analysis diagrams that showed the social connections between the participants before, during and after the Foundation Studies Program. Several diagrams were created in relation to each time period showing the connections present from a range of perspectives including all connections, only two-way connections and Facebook usage.

The analysis of the social network analysis diagrams highlighted key aspects in regards to the social connections that existed between the research participants over the 15 month duration of the research study. First, it was clear that there were a large number of both two-way and one-way connections between the research participant group. Despite the relatively small size and diversity of the group, the connections were still widely spread. Second, even with the wide-spread connections between the participant group, there was still strong evidence of clustering around those who had a similar primary language and cultural understanding. Third, the social network analysis diagrams indicated that while Facebook was widely used amongst the research participants, there is little specific evidence that the connections between the participants themselves promoted the use of Facebook. Finally, the diagrams indicated that the social connections of the research participants changed over the duration of the research study. It was during the time spent studying together that the largest number of connections were present.

The third approach to analysis was the thematic coding of the interview transcripts. The analysis of these interviews aimed to uncover more detail in relation to the participants' social connections, interactions and use of Facebook during their time studying within the FSP course.

The analysis of the interview data produced a large number of themes in relation to the social connections of the research participants. Overall, there were three primary themes that became evident from the analysis. The first theme was in relation to 'interaction convenience' which is a consideration of the level of convenience associated with an interaction. This theme is related to whether an interaction will occur and what method will be used. The second theme of 'environmental influence' relates to the influence of the various environmental factors that are present. The environment plays an important role in interactions and opportunities to form social relationships. The third and final theme was that of 'relationship status'. This theme identifies that the type and strength of relationship that exists between two individuals influences if a social interaction will occur and the amount of effort that is willing to be put forth.

# Chapter Five

# Interpretation & Discussion

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## **5 Chapter Five – Interpretation and Discussion**

### **5.1 Introduction**

This chapter covers the interpretation and discussion of the results obtained from this research. The results were obtained by following the methodology as described in Chapter Three and the analysis of the data presented in Chapter Four. This section presents the researcher's interpretation of the results and discusses the results in relation to the existing body of literature.

- Section 5.2 covers the aspects relating to the formation of social relationships by the participants and the influence of the FSP course on their formation;
- Section 5.3 examines the recognition of the social relationships of the international student participants and identifies that they are subjective and varied;
- Section 5.4 discusses the influence of culture and language on the social relationships of international students, whilst closely related to each other are also separate considerations;
- Section 5.5 comments on the relationships of the international students in relation to the cluster around similarities in language and culture that was observed;
- Section 5.6 covers the preference for face-to-face interaction by the research participants that was influenced by the social environment promoted by the FSP course;
- Section 5.7 examines the influence of the international students' social relationships on their interactions with each other;
- Section 5.8 identifies the importance of convenience in the interaction of international students;
- Section 5.9 comments on the role of technology based modes on the social interactions of the international student participants;
- Section 5.10 identifies the influence of the environment on international students and their social interactions with each other;
- Section 5.11 comments on the use of Facebook by the international student participants to interact and communicate with each other;

- Section 5.12 discusses the influence on the international students of the social environment and social pressures in relation to the use Facebook; and
- Section 5.13 reflects on the chapter and the main points that were interpreted and discussed.

## **5.2 Facebook and International Students**

A key aspect of this research was to examine the role that Facebook plays in the social interactions and relationships of international students. From the analysis of the results it is clear that Facebook was widely used by the research participant group. The social network analysis diagrams that are located in Appendix 2 use colour shading to indicate the frequency of Facebook usage over the 15 month time period of the research. These diagrams confirm the general wide usage of Facebook amongst the participant group. In addition, the numerous diagrams contained within the survey analysis of Section 4.2 strongly indicated a generally high level of usage.

The reasons for using Facebook are also not unexpected with Figure 4.12 identifying the social motivation for initially starting to use Facebook. The 'Other' category identified in this graph included other specifically social activities such as: communication with other students; keeping in contact with others; and because others were using it. Facebook use did have a social driver but as Figure 4.5 and Figure 4.18 show it is not the only mode by which interaction occurs. Figure 4.5 specifically identified other technology based modes of interaction that were used by the research participants with MSN and Skype only slightly less popular than Facebook. With the 52 international students that formed the FSP course group, there is definite overlap between Facebook users and MSN/Skype users. This, along with the communication mode preferences identified in Figure 4.18, clearly indicates that the participants overall used more than just Facebook as part of their social interactions with others.

The international student participants used a range of different technology based modes of interaction of which Facebook was just one such method, as indicated in Figure 4.18. While face-to-face interactions between the research participants were strongly preferred, one interpretation of the research is that technology based modes, such as Facebook, MSN and Skype, are used to bridge barriers to face-to-face interaction. The preference for face-to-face interactions is discussed in more detail in Section 5.8. The reasons for having a suite of modes are likely due to the participants having different requirements in their interactions. The Chinese students' use of Renren, QQ and Skype would likely be used for interactions with family and friends back in China while interactions with other non-Chinese students would have to be via



a different mode such as Facebook. The high usage of Skype likely allows more intimate one-to-one interactions with friends and family. These outcomes also strongly indicate that despite the wide usage and popularity of Facebook, it is still not able to meet the entire social and interaction needs of its users.

Facebook's advantage is its convenience as a mode by which users can interact and keep updated with each other. Convenience as a key factor in the interactions of the research participants is discussed above in Section 5.10. For the international students studying in the FSP course, Facebook was a convenient mode of interaction as it was widely used and easily accessible via the participants' own computers and mobile devices as indicated in Figure 4.33. The outcomes from the interview analysis in Section 4.4.1 identified convenience as a key factor in the interactions of the research participants and Facebook fits this category as it is a technological based mode that is widely used, accessible and efficient in terms of cost and time factors. This makes Facebook an attractive system for international students to use to socially interact with each other in an active or passive way.

The research participant group was composed of students of a range of different ages however a majority were in the teenage to early 20's age range as shown in Figure 4.1. This demographic is attracted to the use of technologies such as Facebook as it allows them to express themselves to others in their social group (Thelwall, 2008; boyd, 2007). The social interaction opportunities and social drivers make Facebook an attractive program for use as it allows young adults to interact more often and in a more convenient mode (Thelwall & Wilkinson, 2010). Research by Grasmuck, Martin & Zhao (2009) and Selwyn (2008) have found that the online and offline interactions between DSN users tend to mirror each other therefore seeing social influences in the adoption and usage of Facebook is not a surprising outcome. This is especially true for the research participant group as they were located in a social environment that did influence their choice to use Facebook.

Social technologies such as Facebook have been identified as a convenient mode by which users can maintain their social relationships and interact with others (boyd & Ellison, 2008; Nyland & Near, 2007). This has an added importance for international students as the research outcomes have identified that social technologies allow them to interact and feel closer to family & friends in their home countries and provides them with social support while geographically isolated (Msengi et al, 2011; Lee, Park & Kim, 2009). While Facebook itself can fit this role it has limitations in its usability and nature of interaction. Facebook, while widely used world-wide, is not universally available or as popular as other modes in countries such as China and Japan. As the use of digital social network is based on real world relationships (Sender & Oishi, 2009;

boyd, 2009) it would be safe to conclude that other social technologies would be needed in order to interact with all members of an international students social group.

For the international students of the FSP course, Facebook is used as a convenient mode by which social interactions can occur with each other. As it does not fulfil all of their social interaction needs it is supplemented by other technologies for interactions with their broader social group.

### **5.3 Social Influence on the Use of Facebook**

The survey results in Figure 4.10 indicated that among the research participants Facebook was the most widely used online social networking program. Figure 4.11 indicates that a majority of those users had a regular usage of Facebook, with only 12 participants indicating they did not use Facebook at the start of the FSP course. One interpretation is that Facebook was already known and used among the research participants and the popularity of this mode may have heavily influenced the other non-user's choice to use Facebook during the 2010 year. It could have created a form of social pressure in that Facebook may have become part of the interaction modes used by the majority of the participants and so those who were not using it may have felt that they needed to. This would have been dependent on the nature of the relationships between the participants.

Social pressure may be a component of the basic social environment that was present during the FSP course 2010. Figure 4.12, Figure 4.21 and Figure 4.22 indicate that the reasons for starting to use Facebook do appear to have a strong social dimension. This is not unexpected as Facebook is a system designed to socially connect people together. However, Figure 4.12 in particular indicates that 'meeting new people' ranked low on the scale of reasons to use Facebook. This would seem to indicate that Facebook usage is not a strong factor in the creation of new relationships with others but more of a mode by which to maintain and formalise relationships that have already been made elsewhere. Usually this would be people met within a social environment, such as the FSP course, Figure 4.22 shows that those participants who were using Facebook had at least some of the other participants connected to their Facebook accounts. This would indicate overall that the social environment is key to getting people to use Facebook and also to have them continue to use it once the social environment changes. This strongly suggests that the social environment in which a person is in is a key aspect to promoting and continuing to use online systems. This results in an interesting symbiosis between the real-world and the online-world.

The overarching motivating factor for the use of Facebook by the participant group was the social environment of which they were a part while studying. This is a similar

outcome as to that found by the ‘Digital Youth Project’ (Ito et al, 2008) which concluded that while young people do use a range of new technologies in their interactions with other people, the basic nature of those interactions are consistent with those before such technologies existed. While new technological ways of interacting with each other continue to develop it would be foolish to too closely associate the nature of the interaction with the mode used.

Expanding this result would seem to suggest that Facebook use, and possibly other digital social networks use, is dictated to a high degree by the social environment in which the users belong. That is, it is not the on-line environment but the off-line environment that promotes the use of online social systems. Past research supports the general idea that the ‘social’ driver for the use of digital social networks such as Facebook are designed around connecting people together (boyd & Ellison, 2008) so it is not a surprising that those who socialised with each other were connected in some way via technological means, be it Facebook or another alternative means. The ease of use of offered by Facebook would also appear to be a positive as technology relies on this to attract and instil a level of confidence in their application (Henderson, et al, 2012). The research by Selwyn (2008), Ryan (2008) and Grasmuck, Martin & Zhao (2009) all indicate that the offline and online identities of Facebook and digital social network users are very similar and so seeing the offline and online relationships are essentially the same is no surprise as well. However, these results seem to emphasise the social need as a driving factor. While the results from this research do support this somewhat, the social environment itself was found to be the primary driving factor for the use of Facebook. Past research may possibly be focusing on the use of digital social networks from the wrong perspective by their examination of online behaviour and its influence on the offline, while a different perspective is how the offline behaviours influence on the online behaviour and use of social technologies such as Facebook.

While Facebook and other such digital social networks allow users to bridge the online and offline environment (boyd & Ellison, 2008) this distinction is less important when the users are geographically co-located. This co-location allows close contact to be available and thus the focus of interaction is toward the offline. The distinction between these ‘worlds’ becomes less important as the online environment is just an extension of the offline and that the social relationships cross into both worlds as supported by the findings of a number of researchers (Selwyn, 2008; Ryan, 2008; Grasmuck, Martin & Zhao, 2009). Identifying that the online supports offline relationships is correct but might be missing an important distinction in the role that digital social networks play in closely co-located groups.

The surveys undertaken as part of the research included a section on Facebook usage to capture a picture over time of how Facebook was used. In the final survey undertaken in early 2011, participants were asked about their use of Facebook during the time after the conclusion of the FSP course which included the three month Christmas holiday and the beginning of the University's first semester. It is clear from Figure 4.30 that while the participants were geographically dispersed, and many had returned back to their home countries, their use of Facebook generally increased overall however once the university 2011 semester one had started the use of Facebook dropped and the face-to-face interactions increased.

This would indicate that during the time that the research participants were separated from each other they used Facebook in order to keep in contact and to keep up-to-date on the activities of others. This use of Facebook was to overcome the geographic distance that was present and to allow a relatively consistent level of interaction with those to whom they were socially connected. The inverse relationship that is indicated would seem to suggest that face-to-face interactions are the preferred way to interact with others from the FSP course but when geographic distance was a barrier, Facebook offered a convenient and easy way to interact.

The uses of digital social networks such as Facebook can be varied but the literature seems to agree that they are used to formalise the relationships that users have (boyd & Ellison, 2008) and to allow general interaction with those people (Beal & Strauss, 2008). It is this general interaction that allows them to maintain and strengthen these social relationships (Jones & Soltren, 2005; Lewis, Kaufman & Christakis, 2008). The use of Facebook is a key example in that by adding existing social relationships to their 'friends' list, users are better able to maintain these social relationships by keeping informed about their activities and sharing information (Williams & Merten, 2009). The research on Facebook use does not seem to discuss in detail what happens to those who do not use Facebook or do not use Facebook often. Previous research indicates that high online usage of digital social networks does not mean that users will have more offline friends or will be able to generate more social capital (Valenzuela, Park & Kee, 2009; Tong, Van Der Heide & Langwell, 2008). This is supported by the research results from this study that showed that social relationships and social capital were created by the face-to-face interactions of the research participants, all promoted by the situation the participants were in being co-located for an extended period of time. What can be learnt is that the offline environment plays a much more important role in social capital creation and the reinforcement of social ties as well as the use of digital social networks.

Overall, it was found that there is a relationship between the offline and online behaviours of the research participants. This is mirrored in the research however

there remains an important distinction between online and offline. There seems to be an explicit acceptance that online behaviours on Facebook influence the offline behaviours and social relationships of users. This does hold true but examining offline behaviours and their effect on the online does warrant further attention from research in the future, especially from the perspective of Facebook that appear to focus on digitally reinforcing the relationships made offline.

## **5.4 The Formation of Social Relationships between International Students**

By comparing the 'before' and 'during' social network analysis diagrams together (Appendix 2a – 2d), it can easily be seen that a large number of social relationships were formed by almost all of the research participants. The social network analysis diagrams do not identify the factors at play that promoted the formation of the social relationships, however when comparing the large number of social relationships that were formed and the characteristics of the FSP course then it would appear that the common course of study played an important role.

Traditionally, the formation of social relationships has been based on a range of human and temporal factors (Berscheid, 2010), in that it is an individual's characteristics, such as level of self-confidence, past experience etc, along with having time to interact with others that are the driving factors in the formation of social connections. While these factors still hold true as being important determinants of the formation of a social connection between people, this research has strongly identified that the environment also plays an important element in connection formation. The environment can both inhibit and allow the formation of social connections. An environment that promotes interactions between people, both through having an individual in close proximity and presenting them with time in which to interact with each will see more social connections being formed between the individuals involved.

The social situation in which the research was undertaken was one in which all research participants spent a lot of time studying together in the same environmental space. Given that a complex web of social relationships had been formed, as indicated in the social network analysis diagrams located in Appendix 2, this is not surprising as the environment and situation provided a good combination of events, conditions and derived beneficial needs that have been identified in the literature (Kelley et al, 1983). The research participants were a very diverse group of students with a wide range of educational and cultural backgrounds. It is these differences that can often make it difficult for relationships to be formed and have been specifically mentioned

throughout the interview analysis, for example in Section 4.4.2 – Social/Cultural Experience and Section 4.4.1 – Language and Understanding.

The results from the thematic analysis in Section 4.4 indicate the environment the participants were located in while studying presented positive factors that appeared to influence social relationship formation; the opportunity to interact and get to know each other; time to interact and develop their social relationships; and a common location in which all participants were geographically co-located. These three factors were strongly indicated in the interview analysis, for example Section 4.4.1 - geographic factors, desired type of interaction & time factors; Section 4.4.2 – social environment, social opportunities & social experience; and Section 4.4.3 – social experience & tiers of relationship). These three factors are inter-related with each other in the promotion of the social relationships of the international student participants.

Opportunities to interact were provided by the actual nature of the FSP course. The course promotes the interaction of students via a range of different classes and a focus on group work for many pieces of assessment. In addition there were opportunities outside of class time to interact as a majority of classes are held in the same location on campus and with the same group of students.

The FSP course was a 32 week program, which is a significant amount of time for students to be studying and interacting together. During the 32 weeks of study the participants attended the same classes with the same people and it was this extended period of time and overall consistency in their study routine that promoted the formation of the social relationships. The differences between the FSP course and an average University course and their roles in promoting social interactions and relationships is mentioned in Section 4.4.2 under the Social Environment and Experience theme.

All of the research participants studied together in the same location during their course of study. Additionally, some participants lived in the same geographic location with each other as indicated in Figure 4.14. Living with Other Participants. As the FSP course is taught out of a single physical location, the students were geographically co-located and so were able to, and in some cases required to, interact with each other on a face-to-face basis. The opportunities for close personal interaction would have strongly encouraged the formation of social relationships with each other as can be seen in the changes in connections indicated in the social network diagrams located in Appendix 2a and 2b and as indicated throughout the interview analysis: for example in Section 4.4.1 – geographic factors; Section 4.4.3 – social environment and experience.

When examining the factors of time, opportunity and location that were seen in the thematic analysis undertaken in Section 4.4, it is obvious that these external factors play just as much of an important role in the formation of social relationships as the personal and human factors identified by Kelley et al (1983). Other research by Dykstra (1990) and Fischer and Oliner (1983) specifically identified the importance of having opportunities to be able to interact. Duck (1991) and La Follette (1996)'s identification of the benefits that a friendship offers are also dependent on the external factors that promote the formation of social relationships being present in the first place. In educational environments social support and benefits are seen as being important to all students and especially international students (Misra, Crist & Burant, 2003; Campbell, 2004) giving students the opportunities for (and potentially forcing) interactions. Research by Milardo and Wellman (1992) indicated the role that the social context plays in relationship formation and the results from this research do seem to support this determination.

Analysis of the social network analysis diagrams located in Appendix 2, are not able to illuminate the role of the psychological and physiological factors (Berscheid, 2010) that also play an influencing role in social relationship formation. This is a weakness of the social network analysis approach and thus while it can be assumed that these factors were also in play, due to the diversity and inconsistency of the relationships shown, they cannot be accurately determined from this methodological approach. The reality is that the study of social relationships is a complicated area of study (Glenn, 1990) so there will always be limitations on the accuracy and detail that can be obtained.

Universities have generally social environments due to the large numbers of students that are brought together with a common purpose in mind. These environments do encourage social interaction and formation through many means such as social events, societies and communal eating areas. However, classroom environments themselves would appear to be the best place to promote these interactions and social formations. While some students will be able form social relationships with each other, many others, especially international students, struggle with this due to the specific psychological, sociological (Berscheid, 2010) and gender/cultural barriers (Dykstra, 1990; Fischer & Oliner, 1983) that are present in university environments in Australia. These 'barriers' can lead to hardship and difficulty in not just a student's study life but their greater life as well. Using the class room environment could be key to improving the educational outcomes of students. However this possibility is hampered by the way the current model of tertiary education operates using many socially restricting methods of teaching such as lectures and online classes. While students are still able to be social and interact with each other during lectures and

other such restrictive environments, these settings do little to promote the social interactions that can lead to the formation of social relationships.

## **5.5 Recognition of a Social Relationship**

The survey, located in Appendix 1, was designed to collect data regarding the social relationships of the research participants. The responses to these questions were used to create the social network analysis diagrams that identified the individual relationships between them. Each of the diagrams located in Appendix 2 show relationships being either one-way or two-way in nature. The created social network analysis diagrams in Appendix 2 indicate that while there were many two-way relationships, there are also many one-way relationships present between the research participants.

These many two-way and one-way relationships do indicate that the idea of a ‘friend’ is more complex than it may appear on the surface. A one-way connection indicates that the connection is only recognised by one side and not the other and could be interpreted as that relationship being weaker in comparison to the other two-way connections. A connection could be considered stronger when both individuals involved recognise it. The participants are unlikely to forget their good friends. While this is not a definitive indication of relationship strength, it is an indicator that social relationships do vary and all the terms that could be used to separate out friendship, ‘best-friend’, ‘friend’, ‘acquaintance’, ‘class-mate’ and ‘student’ are still up for personal interpretation.

The outcomes from the social network analysis diagrams can be further interpreted to determine that the strength of the relationships between the research participants is also varied. The many one-way and two-way relationships, group clustering and cultural differences strongly suggest that the strength of the relationships would also vary. This is likely to play a role in social relationships after the conclusion of the FSP course. The diagrams of the social relationships after the course would indicate that some changed once the participants no longer had a common environment and purpose. This also identifies the complexity of the social relationships of the participant group as well as the differing nature of those relationships.

The subjective nature of social interactions and their meaning and significance would seem to be dependent on the individual person and the nature of not just that relationship but the relationships they also have with others. The complex nature of social relationships is well documented (Glenn, 1990; Allen, 1989) as too is the literature on the meaning and significance of friendship as a type of relationship (Duck, 1991; Wright, 1984). The findings from this research support the existing literature



indications that social relationships are subjective and complex and that the social connections that an individual will form with others are difficult to define and predict.

Aristotle's categorisation of friendship, as described in Allan (1989), goes some way to explain the complexity associated with specifically identifying and measuring a friendship. Aristotle describes that friendships can be utility and or pleasure driven and given the structure of the research participants this would appear to hold true. Some friendships that are pleasure driven are likely easier to define while utility friendships that are based around the support needed to study (La Follette, 1996; Kelley et al, 1983; Bell & Coleman, 1999) are more difficult to define. Overall this finding further reinforces the complexity that exists around social relationships and that the understanding of the term 'friend' itself is complex and open to interpretation by each individual human being.

The literature on relationship strength supports the outcome of relationship strength varying from strong to weak (Wellman & Berkowitz, 1997). Granovetter (1973) and later Haythornthwaite (2005) identify that relationships between individuals can differ in strength with their being advantages associated with both the 'strong' ties and 'weak' ties between individuals. However they do not strongly address the possible variations in strength or where the boundary is between a strong and weak tie. It is clear that further recognition in the strength of a social tie is needed, as having just two categories does too much to simplify the relationship concept. What is needed is a further broadening of the categories of friendship to better recognise that social relationships go beyond just strong and weak.

## **5.6 Culture and Language in Social Relationships**

The aim of this section is to discuss the role of culture and language in the social relationships between international students. As was expected, culture and language did play a role in the social relationships within the class of international students that were undertaking the Foundation Studies Program (FSP) course as identified in the analysis of the interview data in Section 4.4. Specifically, all three primary themes described in Section 4.4.1, 4.4.2 and 4.4.3 had threads identifying the influence of culture and language on their interactions and relationships. However the research identified that while language and culture are closely aligned in the social relationships between international students, they can play separate and contradictory roles in some cases.

The factors of culture and language playing differing roles in the social relationships of the research participants can be seen through an examination of the social network analysis diagrams located in Appendix 2. From the diagrams it is clear that many of

the participants had social relationships with others from the same country. This tendency is indicated in the grouping between participants across all social network analysis diagrams. This would have been due to the similarities in language and cultures that are shared in those countries and thus was not a surprising outcome to see. The countries of some students traditionally have strong cultural norms that are taught from a young age and thus have a strong influence in their interactions and activities with others. For example, the cultural norms present in Saudi Arabia are strongly influenced by the common Muslim religion and these can differ dramatically from those of other countries. It is these cultural norms along with a similar language that can strongly influence social relationships. However, the research indicated that the link between culture and language is not always complimentary and in should be considered as separate factors in social relationships, this is discussed in the next paragraph.

From the survey data in Figure 4.3 it was seen that of the 13 Saudi Arabian students, 12 were male and one was female. In the 'During' social network analysis diagrams located in Appendix 2b, 'Saudi Arabia 5' is highly isolated from the rest of the Saudi Arabian group due to being female. Females in Muslim countries, such as Saudi Arabia, are forbidden to interact with other Saudi men unless married to them or supervised by a male family member. It was this cultural norm that isolated 'Saudi Arabia 5' from those of a similar culture and language. In this case culture and language similarities had the opposite effect on social relationships.

Another interesting exception can be seen between the social relationships of 'Saudi Arabia 13' and 'Bahrain 1' in the social network analysis diagrams located in Appendix 2b. These participants speak a similar first language and have similar cultural backgrounds however they show indications of having strong social relationships with those from different language and cultural backgrounds. Both these participants were interviewed and from those interview transcripts they indicated that they had experience studying outside of their home countries before undertaking the FSP course. One had previously undertaken study in China and the other had studied in Malaysia. The interpretation of the interviews that this experience in living and interacting with those of a different culture was likely the reason they were able to form social relationships with others from different countries.

The literature on interactions and the role of language and culture is well covered and it is recognised that these factors are important in the social relationships between individuals (Liddicoat et al, 2003; Gudykunst, Ting-Toomey & Chua, 1988; Whorf, 1956). The literature has also shown that in relation to social relationships, language is not only how words are structured and used but also the cultural meaning behind the what, how, why and when they are used (Xu & Davidhizar, 2005; Gudykunst, Ting-

Toomey & Chua, 1988; Mead, 1934). However this research has shown that while culture and language are inter-related to a high extent they do not necessarily always work together or in the same way in the social relationships of individuals. Cultural similarities can work against social relationships even when a similar language is spoken, for example, Saudi culture prohibits male to female relationships except in certain circumstances. The formation of social relationships between individuals with different cultural backgrounds is made much more likely to occur when those involved have a certain level experience of different cultures. This cultural experience allows a greater level of understanding to be exhibited and used to overcome cultural barriers.

The results from the research show that while the common understanding of the relationship between culture and language is still relevant, they should also be considered and examined individually when considered in relation to the social relationships between international students. Having a common cultural background and or common first language will not guarantee the formation of social relationships or prohibit other social relationship formation with those of a different cultural and language background.

## **5.7 Social Clustering and Relationship Diversity**

From the social network analysis diagrams located in Appendix 2, it can be seen that the number of relationships present are many and varied with a web of connections having existed between the research participants. This variety of two-way and one-way relationships that were present between the research participants 'during and 'after' their time studying together indicates a level of diversity and complexity existed, as discussed in more detail in Section 5.5. This means that there is no clear division between a majority of the participants and how the self-reported social relationships were formed. In the 'Before' social network analysis diagram in Appendix 2a, there is a very obvious division between the participants. Those who did know each other before the course began had a variety of relationships with others in that group however there was still a clear divide between them. This divide indicates that prior to the FSP course commencement many of the participants did not know or have any social relationships while others that did have pre-existing relationships were clustered together.

Results show that the FSP course offered an environment in which wide ranging social relationships were able to be created despite the differences in language and culture that would be expected from students from a wide number of countries of origin and with differing primary languages. This is seen in the 'during' social network analysis diagrams located in Appendix 2b. These diagrams show a complex web of social

connections existing between the research participant group. While cultural and language clustering was seen, these clusters are not isolated from each other with many participants within a cluster also sharing connections with those outside of it.

Another aspect is that despite the wide ranging relationships that the FSP course allowed to form, there was still clustering present (Appendix 2b, 2c & 2d). While these clusters were not isolated from each other, due to connections existing between the different clusters, they are still distinct and appear to be based around commonalities. These commonalities appear to have come about not just from past social relationships but also the common backgrounds as discussed in Section 5.6.

Cultural norms play a large role in how interactions occur and relationships are formed (Allan, 1989; Dykstra, 1990; Fischer & Oliner, 1983) along with the cultural experiences that each individual has developed in their lives (Windschuttle & Elliott, 1999; Liddicoat et al, 2003). When a group from a wide range of different cultural backgrounds interacts together, this interaction can be more problematic than between those with similar cultural backgrounds (Milardo & Wellman, 1992). The literature identifies that when interaction and communication occurs then cultural background and language factors can be both a positive and a negative, such as a similar cultural background can lead to much more convenient interactions, while cultural differences can cause problems and issues (Misra, Crist & Burant, 2003; Campbell, 2004). This paradigm is also evident in this research with their being clusters and interactions between those of similar cultural backgrounds, a fact common in social network theory (Cartwright & Harary, 1956). However, despite the clustering there are still extensive social connections present between all of the research participants; even between those with different cultural backgrounds.

An initial assumption would usually indicate that culture plays the biggest role in the formation of clusters within a group however while this could still be considered to be playing a role, language appears to be the biggest influencing factor to the groupings. This conclusion can be seen in the three clusters that are present in the social network analysis diagram representing the situation 'during' the program overlaid with the primary language spoken by each participant in Appendix 2e. These clusters are not just isolated by country of origin but also by languages spoken. The three clusters seem to be based around the Chinese, English and Arabic languages with other potential clusters around other native language that may not be as obvious due to the low numbers of those native speakers in the research participant group.

Past research has grouped culture and language together as factors that influence interactions and relationship formation (Allan, 1989; Dykstra, 1990; Fischer & Oliner, 1983; Milardo & Wellman, 1992; Xu & Davidhizar, 2005). While this still holds true, this may be changing to a point where it could be better to separate out culture and

language and to treat them as separate factors. Language ability when interacting with others is an essential skill as interaction requires a common language (Lee, 2003) however the research identifies that it is more than just the language itself, it is also the social rules and past experiences that influence the way in which language is used. Research by Maynard and Perakyla (2003) and Chitakornkijasil (2010) do specifically identify the factors affecting language however the literature in general does not seem to identify culture and language as possible separate considerations in communication and social relationship formation. This may be an important distinction, especially when researching the experiences and abilities of international students.

For people who have diverse cultural experiences, cultural awareness is likely to increase to a point where culture is less of a barrier. In such cases it is likely that language itself would become a greater barrier to interaction, as a common language is still an essential element to communication while cultural understanding can be learnt. In some cases this understanding and language ability are not necessarily being learnt together or at the same rate. Therefore it may be a better approach in future research to examine diverse cultural group interactions from language as its own element.

For this research the FSP course is conducted exclusively in English and all participants are required to meet a particular English level before being able to undertake the course. This would assume that all participants have a sufficient level of English to be able to interact with each other. However the possibility that participants are only able to fully and effectively communicate with their primary language can be a barrier to interaction as well. In the clustering, there are a small number of participants that have caused an overlap between clusters, primarily the Saudi and English speaking ones. It is likely the similar cultures and primary language cause those participants to cluster together however their English language ability appears to have allowed them to also be part of the other cluster groups.

## **5.8 A Preference for Face-to-Face Interaction**

The use of computers, mobile phones and other forms of technological systems for the purpose of interacting and communicating is seen as a regular part of everyday life and are common usage by younger people such as students. There are a range of programs and technologies that allow interaction to occur and the survey at Figure 4.5 identifies that a range of technologies were used to interact socially with other people. Yet Figure 4.18 and Figure 4.30 indicate that face-to-face interaction is the preferred mode of communication within the participant group, at least when it is a viable mode.

Figure 4.18 in particular is of interest as it shows that, with the exception of communicating with university staff, face-to-face interactions were preferred. When considering that the participants had close relationships with other FSP students then identifying face-to-face as a preference is not surprising. Email on the other hand ranked low in personal communication likely due to its nature as a relatively impersonal mode.

When examining the preference for interaction with the other FSP students, it can be seen that while face-to-face is high, in Figure 4.18 the research participants also indicated that other methods were used, such as mobile, social network and chat program. This spread of results indicates a possible separation in the social relationships of the participants. If a participant did not feel comfortable in interacting face-to-face then they preferred a different mode that is still more intimate than email but maintains a level of distance. This was mentioned by interviewee D in Section 4.4.1 – ‘desired type of interaction’ where they mentioned that they preferred email in some types of interactions as it allowed them to better express themselves when interacting with teachers. Interviewee D also mentioned in Section 4.4.2 that they have difficulty interacting with those they don’t know in their new course of study at University, compared to their time studying the FSP course. This difference may also be due to the level of English language ability and this again is something that may influence mode of interaction however the survey results in Section 4.2 do not provide any specific insight in relation to this but it was a clear theme through the interview analysis in Section 4.4.

It is understood that there is a relationship between the strength of a social relationship between two people and the physical proximity of those people (Mok, Wellman & Basu, 2007). This relates to the non-verbal cues in communication and interaction that are important to the richness of what is communicated (Chitakornkijsil, 2010; Mead, 1934). The literature also identifies the commonly occurring problem of cultural misunderstanding that may occur between individuals with different cultural backgrounds and experiences (Windschuttle & Elliott, 1999; Liddicoat et al, 2003). However as stated above, the survey results do not offer insight into cultural aspects of interaction. The idea that the stronger the social relationship the more likely face-to-face interaction would be used is supported by the literature. O’Halloran, Worrall and Hickson (2011) identified three barriers: the environment, communicative ability and personal characteristics as playing key roles. A stronger relationship would strongly suggest that trust and confidence, which are personal characteristics, would be higher between stronger relationships and thus interaction with university staff, where a higher level of confidence is needed, would be expected to show a preference away from face-to-face.

## **5.9 The Role of the Relationship in Social Interactions**

The interview analysis in Section 4.4 identified that the relationships between the research participants has an influence on their social interactions with each other. From the analysis, it could be seen that the nature of these social experiences was an influencing factor on their relationships, as indicated in Section 4.4.2 – Social/Cultural Experience. All of the interviewees reported that from a social perspective they had a very positive experience in doing the FSP course and that was due to social interactions they had with the other participants. This positive social experience led to the development of close social ties with some of the other participants that continued beyond the program's conclusion, as indicated in the social network analysis diagrams in Appendix 2b, 2c and 2d, and strongly suggests that greater interaction was had and greater effort was put forth into maintaining those relationships that were stronger, as indicated in Section 4.4.3. While the interviewees indicated that they had good interactions and relationships with a majority of the other participants, it was only a chosen few with which they have strong ties and prefer more intimate one-to-one interactions that are undertaken directly via face-to-face or using programs such as Skype and MSN when geographically separated.

Theory on social interactions and communication indicates that the environment and the people in that environment do influence each other (Kilduff & Tsai, 2003; O'Halloran, Worrall & Hickson, 2011; Berscheid, 2010). These influences can have a direct effect on psychological and emotional wellbeing (Mehl et al, 2010; Allen, 1989). Considering the positive experiences offered by the FSP environment and interactions led to the formation of strong social ties. This is not an unexpected result. Kelley et al (1983) identified that relationships are formed via events and conditions and this was the case for the research participants in the study program provided these. Friendship is not always a voluntary activity (Allen, 1989) and while the environment does play a role there are also personal factors that influence the level and strength of the relationships that individuals form with others (Festinger, 1954). Research into the online offline interactions with those that we know has shown that they tend to mirror each other (Selwyn, 2008; Ryan, 2008; Grasmuck, Martin & Zhao, 2009) and so the finding that states that those with stronger relationships use more intimate modes are also supported.

It is not just a positive social experience that plays a role in the relationship status, it is also the type of interaction that is desired, as indicated in Section 4.4.3 where differing interaction approaches were mentioned, for example under the Desired Type of Interaction sub-theme. The nature of the relationship influences the type of interactions that occur. For the general relationships in which the relationship is not as strong, then accidental interactions (such as meeting at university) or Facebook are

used as a way to maintain the social ties while not putting a great amount of effort and energy into the relationship. Only in situations where there is a strong relationship is a lot of time and effort put forth, for other relationships, general interactions are considered satisfactory. This indicates that participants had access to a range of different modes of interaction that could be used with each other. The choice of mode depended on the nature of the relationship where the stronger the relationship the more intimate the mode used which was indicated in Section 4.4.3 – desired type of interaction.

Human beings naturally form relationships with other people (Berscheid & Peplau, 1983; Milardo, Johnson & Huston, 1983) and the purpose behind these relationships can be personal similarities, social support and/or the need for assistance (Pearson & Beasley, 1996; Festinger, 1954; Kelley et al, 1983). In an educational environment the need for assistance is a key driving factor in the creation of friendships with others (Misra, Crist & Burant, 2003) as friends are key sources of support. Friendships can serve different purposes (La Follette, 1996) but exactly what constitutes value and benefit is subjectively covered in the research. However what is implied is that the strong friendships and relationships that are created are based on more than just educational assistance; they are also based on the similar personal characteristics as described in social comparison theory (Festinger, 1954). These strong relationships benefit those involved on a more intimate level while the weak relationships are the ones that exist for more specific benefits and thus are likely to degrade over time as that immediate benefit is no longer provided or needed. The literature seems to support the idea that the greater the benefit derived from a friendship the more likely that friendship will continue while there is continual benefit and value being derived.

In summary, the status and nature of the relationship that exists between a person and another person or group determines how interactions occur and the amount of time that is put into them. These relationships are developed during times of opportunity. The opportunity to interact leads to some level of social relationship being developed and therefore some level of social strength. When the strength of that relationship is strong then more intimate interactions are sought and more time and energy is dedicated toward this. This is where Facebook's as a technological system allowing the formalization of social relationships and also, and most importantly, greatly assists in maintaining the social relationships with those that we do not have a strong relationship with but would like to keep none the less.



## **5.10 Convenience in Interactions**

A major theme identified in the analysis of the semi-structured interviews in Section 4.4.1 was that convenience was a consideration in the interactions of the research participants. Convenience plays a role in determining how interaction occurs, when they occur and with whom. Section 4.4.1 identified a number of factors that influence the level of convenience of a particular interaction, all that determine whether or not an interaction will proceed and by which possible method will be preferred. Convenience in this sense is essentially a consideration that motivates an interaction when there is some need for it to occur; the greater a convenience the more likely an interaction will proceed. The convenience of an interaction is determined by a range of factors relating to the environment, the individuals involved and the nature of the interaction.

### **5.10.1 Accessibility in Interaction Convenience**

In terms of the convenience factor in interactions; accessibility plays a role. Accessibility refers to the factors that determine how accessible another person or group is when interaction may take place. From the analysis of the data in Section 4.4.1, general accessibility was identified as being a factor and that this could come in many forms, be it having the same class as another person, living in the same location or being friends; and other factors that are geographic in nature. When people are geographically located then interaction is much more likely and will occur more frequently. This was an aspect of the Foundation Studies Program, as all of the students who undertook the course had opportunities to spend a large amount of time together both in studying and in interacting with each other outside of class. This was due to the nature of the course with the program being relatively isolated from the usual undergraduate courses offered by the University of Tasmania. These aspects are discussed further in Section 3.5.3.1.

There are two factors that play the most obvious role when it comes to interaction; they are the factors of cost and time. Interaction can be given a value in terms of financial costs and time associated with them; be it buying a new car or going for a walk outside or even just sitting and watching TV. The same can be said for interacting with other people. From the perspective of convenience, interactions that are quick, easy and not costly are the most convenient. For interactions with people in which we do not have a strong relationship, cost and time are significant factors. For example, it is unlikely that one would call someone and talk for a long time using a mobile phone unless they have a strong relationship or something important to discuss. This was a clear factor in the interviewees' consideration of why they used certain technologies to interact and communicate with the Internet based modes

considered most cost effective as evidenced in Section 4.4.1 – Cost Factors and Time Factors.

One theory relating to the formation of social networks is that of the structural role theory that identifies that we are influenced by those around us (Kilduff & Tsai, 2003). This was most certainly seen in the research participant group, with the small size and close proximity of the participants while studying together. Smith (2010) also identifies a range of barriers to communication that include the physical and interpersonal. What is surprising is that convenience is not mentioned as an explicit factor in the theory on interaction and communication. Factors such as accessibility, cost and time also do not seem to be mentioned as specific influencing elements in social interaction and communication but instead implied once again in a range of different theories such as the environmental and ability barriers to communication (O'Halloran, Worrall & Hickson, 2011); physical and interpersonal barriers (Smith, 2010) and structural theory (Kilduff & Tsai, 2003). While these factors could be considered obvious in many regards, the lack of specific theory relating to them is strange to see as they do allow a more specific identification of barriers and possible way to overcome those barriers if needed.

#### **5.10.2 Technological Systems in Interaction Convenience**

This concept of accessibility was also present in the interactions that occurred via the use of technological systems. From the interviews it was clear that all interviewees used technological systems as one of their forms of interaction and communication with others with these being mentioned both in the survey data in Section 4.2's Figure 4.18 and Figure 4.30, as well as throughout Section 4.4.1. However, often there was a barrier to its use, such as identified in Section 4.4.1 – Technical Ability and Accessibility sub-themes. For example, when interacting with their parents who were often not tech-savvy and as such needed assistance to be able to use particular technological interaction methods for interaction, such as Skype which was a specifically mentioned example. Skype is popular because it allows phone and video calls to be made free of charge and thus is much cheaper than traditional phone calls. The unfamiliarity in using technological systems to communicate was a barrier which required extra effort to bypass. However this barrier did not appear to exist in terms of interacting with other students in the FSP group or other people that they knew, as it could be expected that technological systems usage is commonplace amongst the relevant age group.

The participant group consisted of people from a range of different ages however 42 of the participants fell within the age range of 17 – 24, as shown in Figure 4.1. The age range is representative of those who would be tech-savvy and are likely users of social

technologies. Figure 4.6 and Figure 4.7 support this level of technological based awareness and experience with the wide range of digital social networks used and the self-reported computing experience. When examining the participant group in a broader context they could be considered as being representative of international students who are studying at university in Australia. Hence it is possible to attribute the behaviours of this group to the broader international student community.

By examining the results it can be seen that once the research participants were studying at the University they had relatively easy and consistent access to computers and the Internet. This access was unlikely to be a major barrier to the participant using technological systems and interacting via such means. In essence, the student participants had the tools at their disposal so the main question is how those tools were used.

Having access to computing systems is an essential part of the approach to education worldwide (Tamim et al, 2011). Universities work to ensure that students have sufficient access to these systems as classes require technological systems that are capable of supporting their study. It is the environment that provides access to these tools. Computing skills have also become essential for students to have and so this requirement will help to drive skills to suitable levels. Therefore past indicators of socioeconomic status, age and gender which are commonly associated with ICT usage (Volman, et al, 2004; Sutton, 1991) are less reliable.

In terms of convenience in interactions, technological systems play a role. Technologies like Skype can be used to talk with friends and family over distance while programs like Facebook allow the relationships to be easily formalized and tracked than traditionally approached. It was a clear theme for this research that Facebook was a useful program for keeping up-to-date with other people, as it allows relationships to be maintained with minimal effort. In addition Skype was commonly used for more personalized interactions with those of stronger social ties. While Skype makes the interaction convenient, there is still a time factor involved as it is usually only used to interact with one other person at a time, definitely not a convenient mode in terms of time however the strong relationship that exists and the desire for a more personalized interaction makes Skype desirable. Facebook on the other hand is cost free and can be used quickly to keep up-to-date with a large number of people in which direct contact is not needed or desired. It should be noted that a common theme throughout the interviews was that while Facebook is convenient to use for interaction with others on a general level, it has actually become a time consuming program in itself. This is due to the need or desire for some of the interviewees to feel connected to others and Facebook is simply the most convenient mode for doing that.

The theory on technology and its ability to connect people by overcoming barriers is well documented (Rheingold, 2003; Constant, Kiesler & Sproull, 1996; LaRose et al, 2001; Haythornthwaite, 2002; McKenna & Bargh, 2000) and the outcomes from this research support the body of work already completed. However, the idea that Facebook, as a social technology, can also be inconvenient is somewhat contradictory in that the time/cost saving achieved by being able to stay connected to others also creates a situation where time can be wasted as users are known to become addicted to the technological systems (if to a much less degree that traditional addiction would be associated). It is possible the benefits identified in the literature are still present but only up to a point in which the technological system once again becomes a barrier.

In considering why convenience plays such a role in interactions, it could be determined that interaction with others requires the use of limited resources, with time being specifically associated with convenience. Time is limited and valuable, especially to students so when interaction is to occur then convenience relates to a 'path-of-least-resistance'. The more convenient interaction is the more likely it is to occur. Other costs such as money can be used to increase convenience however for international students studying overseas, this is often a limited resource that must be carefully spent. There is a strong indication that the importance of convenience can be minimised when there is a strong relationship between an individual and another person(s). In this case the desire to interact on a more intimate level will overcome many of the other barriers that make that interaction less convenient.

### **5.10.3 Human Factors and Relationships in Convenience**

Interaction convenience is also impacted by the personal characteristics of each individual and the desired type of interaction they wish to have with others. The thematic analysis of the interview data indicated an overlap between the three primary themes of 'Interaction Convenience', 'Environmental Influences' and 'Relationship Status' covered in Section 4.4 and graphically indicated in the diagram in Figure 4.36. Personal characteristics such as the level of confidence in interaction, ability to use a common language and the type of relationship that people share with others are aspects that influence convenience. Due to these factors, the mode and type of interaction used by an individual can differ depending on who they are communicating with. In one of the interviews, the interviewee indicated that they prefer to communicate and interact with their university teacher via email; they said that this is the most convenient mode as speaking to teachers in person made interaction more difficult due to nervousness inhibiting their ability to communicate effectively. This same person indicated they have no problem talking to the people they know well and have a good relationship with as they feel more comfortable to do so. The interactions between the research participants were likely influenced by the

personal characteristics of each other. While these characteristics, such as confidence and communication ability, can vary from person to person, these are mitigated to a certain extent by the nature of the relationship. A positive relationship can minimize the influence of personal factors that may inhibit communication and thus make interactions more convenient.

The mode of interaction is dictated by convenience. Interacting with a teacher via email is, for the particular interviewee example mentioned above, the most convenient mode based on the relationship and the level of stress associated with the interaction. However interactions with close friends are preferred to be undertaken face-to-face as this is convenient and more intimate in nature and when this is not possible due to geographic distance then personal technology based modes, such as Skype were used.

Social network theories, such as social comparison theory (Festinger, 1954), states humans like to interact with others that have similar characteristics; and balance theory (Cartwright & Harary, 1956) that identifies that humans form sub-groups with similar individuals within larger groups. There are two theories that identify the differences and similarities of how individuals influence interaction and group formation. These sub-groups and relationships with similar individuals would mean that interactions would differ compared to those on the outside, even if part of the same larger social group. Wellman and Berkowitz (1997) identified that the ties that exist between people are influenced by type of relationship, level of interaction and duration of the relationship. This seems to support the research that shows individuals interact with each other in different ways and that these ways of interaction are complex and differ from relationship to relationship. The complexity does appear to stem from human factors, the same factors that make individuals unique. These personal characteristics such as emotion, communicative ability and experience are unique to each person (O'Halloran, Worrall & Hickson, 2011; Smith, 2010).

#### **5.10.4 Language and Culture in Interaction Convenience**

Another aspect related to the influence of convenience on interactions is language and cultural understanding indicated in Section 4.4.1 – Language and Understanding and Section 4.4.2 – Social/Cultural Experience. The FSP course is designed to prepare students for study at University in Australia therefore all classes are taught in English and English language use is required during all class times, in interactions with teaching staff, and must be used in all work that is undertaken. However, although English is required, taught and commonly used this did not mean that it was the only language used, as indicated in Table 4.2. The self-reporting in the survey in Figure

4.16 indicates that participants did not always use English outside of the FSP course. In fact the spread in usage percentage could be an indication that native language was the preferred mode of communication for the research participants.

The variations in English language usage as indicated in Figure 4.15 suggest that native language is the first choice in interactions with other participants. This is not a surprise as native language is the most efficient mode by which to communicate with others. It is only when a common native language is not shared between participants that English was used. It is concluded that the convenience that a first common language provided made it the most attractive and efficient mode by which to interact and communicate with other participants.

However while having a common first language can lead to a higher level of convenience when interacting, lacking a common first language could also lead to the isolation of those who do not speak that particular language, thus creating a situation when there are two tiers of communication between the participants, one with English and one with a participants first language that is better understood and can be better used to communicate more effectively. The researcher's experience in teaching the FSP course supports this preference for native language communication, as in group work situations native language has been used to the detriment of non-native speakers. Therefore both having a common first language and having a suitable level of English ability can lead to better interactions and communication while deficiencies can have an opposite effect of leading to the alienation of others.

The finding of a preference for native language in communication are supported by the literature in that language, along with the cultural similarities, as being important elements in interaction choice and preference (Maynard & Perakyla, 2003; Sanders, 2003). While the survey analysis was not able to identify the specific cultural elements that were at play, it is known that language is an important part of interaction and that the higher the ability with a language then the better the communication potential, as indicated by the importance of language in education (Abel, 2002; Wimberley, McCloud & Flinn, 1992). Communication is about both language and cultural understanding so while both elements work together, the analysis of the survey data was only able to support the language aspects; even though it can be assumed that there are also cultural elements at play.

Although not a common theme between all the interviewees, there were times where being unable to understand and communicate effectively caused issues for participants in the FSP course. This was to be expected as the course had many different people from many different countries and backgrounds participating. When a common language is spoken understanding is less of a barrier to interacting. However when the language ability or usage is different between participants, then

understanding can be a problem. Some of the interviewees indicated that the English accent of some members of the FSP course was an issue although it was overcome through time and experience in some cases. However, some of the cultural groups were harder to interact with than others. The most common being indicated in the interviews was the Chinese group of students. This group interacted less with others and from the interviews this was because of issues with language; specifically confidence in the usage of English. In this case despite having a common language in which to interact, language and cultural differences were still present. Even though all participants had a suitable base level of English language ability, it was still difficult for interaction to occur between certain individuals and groups of individuals.

This difficulty raises some interesting considerations for international students. Just because a student has a particular assessed level of English language skill, this does not make it easier for them to interact with others. In addition, just because an international student comes from a culturally diverse country, this does not mean that they cannot interact successfully. It would appear that while English language ability is important in an academic environment, cultural understanding of that environment and personal confidence to interact are also factors. Convenience is the path of least resistance and culture understanding and language ability directly influence convenience.

The theory on language and culture seem to support the interpretation of these findings indicates that both language and culture affect interaction and communication (Sanders, 2005; Lee, 2003; Liddicoat et al, 2003; Windschuttle & Elliott, 1999). Research has also identified the importance of language and culture in academic performance (Abel, 2002; Wimberley, McCloud & Flinn, 1992) in that it not only affects ability to learn and perform academically but also to interact with others; which are both essential for international students who wish to succeed studying internationally. The theory does however seem to draw a close relationship between language and culture in relation to interaction and communication, for example the role of language ability and social rules play together in effective communication (Chitakornkijasil, 2010; Liddicoat et al, 2003). While it is accepted that language and culture are intertwined together, perhaps examining them individually in greater detail would be more beneficial in the educational environment. That is to say, that while assessing language ability for entry into university is still a requirement; cultural understanding should also be considered a key indicator of academic success while studying overseas.

## 5.11 Technology and Social Interactions

It may, at times, be easy to assume that everyone has the same level of access to technology based interactions modes and uses them in the same way as everyone else however this is not the case. In the interview analysis throughout Section 4.4 there was an occurring theme relating to interactions differing due to the technology involved. For example, in the Section 4.4.3 – Tiers of Relationship sub-theme, interviewee B mentions that their parent's usage of Facebook inhibits their use in that they feel they need to be more careful about what they share with their friends as they will be sharing with their parents as well. Another example is in the Section 4.4.1 – Accessibility sub-theme, where interviewee F mentioned that their parents were not good with technology due them being older. Though there were also examples

Also throughout the analysis of the interviews in Section 4.4, was a theme relating to considerations of how the participants interacted with teachers. Teachers, like parents, are likely viewed to have a differing social relationship and thus there is also a difference in how technological interaction is undertaken. For example, in Section 4.4.1 – Desired Type of Interaction sub-theme, interviewee D found email a much more approachable form of teacher interaction compared to face-to-face. This was echoed by interviewees E and C in Section 4.4.2 – Method Popularity.

It was clear that these interactions between the interviewees and other individuals of a differing social level were undertaken differently compared to interactions with those between other participants of the FSP course. Generational differences between people (in this case between the participants and their parents or teachers) meant that they did not necessarily want to use a certain mode to interact with them, either due to wanting control over what is known by whom or by feeling more comfortable interacting in a certain way. This was an indication that they did not want to use Facebook for interactions with their family members as it would make them feel 'strange' or as if their privacy had been invaded as they want to share some things with some people but not with others; in this case they wanted to share some things with the friends that they would prefer their parents did not know about. This is a common aspect of the relationship between people of different generations when the sharing of information and privacy concerns influence what and how interactions occur.

Previous research that has examined the role that technological systems play in connecting individuals with their family and friends has shown that technological systems can help to stay in contact. Specific technologies, such as Facebook, can have a positive psychological impact by reducing the feelings of loneliness and isolation that can develop when away from family and friends for a period of time (Msengi et al, 2011; Poyrazli & Lopez, 2007; Lee, Park & Kim, 2009). This research has indicated that



while the use of technological systems to interact with family and friends is true, it also found that its use is influenced by the audience. Teenagers, whom made up a majority of the research participant group, do have a separation between groups within their lives due to the desire to avoid social surveillance and control that may come about when sharing with others such as their parents (Brandtzaeg, Luders & Skjetne, 2010). However, an important consideration found in a report by Ito et al (2008) was that while teenagers and young people do make extensive use of technology for interaction with others, the technological system itself does not appear to influence the overall nature of that interaction. The interaction they have with their parents, for example is similar in nature, only the mode used is different. While a range of technological modes of interaction are available, it is common to restrict usage of particular modes to certain social groups as a way to enforce privacy control.

The concerns around privacy and information sharing were also present in the interview analysis. The interviews Section 4.4.2 – Privacy and Information Sharing revealed an awareness of concerns around privacy and issues with sharing information in a public space like Facebook. The nature of these concerns was not the same for everyone, with interviewee B and F specifically identifying specific personal and relationships factors as being of concern while Interviewee D showing less concern and just overall awareness and control. This privacy awareness did influence how they acted online and on Facebook. One interviewee mentioned concerns around sharing too much on Facebook because that information could get back to their family and that there were things in their life they did not want to share with their family. Another interviewee had concerns about future employment and the impact that sharing online could have now that it is possible for potential employers to ‘Google’ their name to discover information and to learn more about them. These concerns are taken as a normal part of online interactions by participants and while the concerns were there they did not restrict their usage, it just dictated what and how sharing occurred. It is likely that ‘what’ was shared depended on the environment. Sharing on a face-to-face basis was likely preferred between those with a close relationship due to the inherent trust that a close relationship entails. However face-to-face sharing cannot always be possible when there is geographic distance and hence technical methods become a useful and convenient enabler. In those cases where there is distance, other modes (such as Facebook or Skype) are used, as indicated throughout all of the primary themes identified in Section 4.4. So while there is an awareness of the public vs. private modes and the possible outcomes from the sharing, sharing and interaction are still undertaken activities.

Privacy is a well-known and covered consideration in the use of technology based modes of interaction and communication especially in regards to the use of digital social networks such as Facebook (Jones & Sultan, 2005; Lewis, Kaufman & Christakis,

2008). This has been due to the nature of these networks that allow personal information to be stored in a potentially public area and then disclosed to others. The research seems to support the outcomes indicate while there are privacy concerns and threats (Debatin et al, 2009; Bonneau, Anderson & Danezis, 2009; Jones & Sultan, 2005) these do not have any major influence on the use of digital social networks (Debatin et al, 2009; Acquisti & Gross, 2006). Most concerns influenced usage as the participants were active in considering what to post based on the potential audience.

To summarise, technological systems play an important role in the social interactions of international students. Technology based modes of interaction are broadly used to interact not just with those they study with but also family and friends back in their home countries. While concerns around privacy and information sharing were present, this did not appear to have any major impact on the choice to use technology based modes to interact and share with others.

## **5.12 Influence of the Environment and Social Interactions**

Another major theme to emerge from the analysis of the interviews in Section 4.4 is the influence of the environment on a social interaction. This theme is primarily supported by Section 4.4.2 which identified a primary theme of Environmental Influences. This theme relates to the role and influence of the environment on the 'if' and 'how' a social interaction is undertaken. The social interactions of the research participants in this research study were influenced by the social situation, the geographic aspects and the technical characteristics that were present.

### **5.12.1 The Social Situation within the Environment**

Another overarching aspect that was an influencing factor on the social interactions of the research participant group was the social situation and social aspects of the environment. When it comes to interacting, the social environment plays a role in that it presents social opportunities and social experiences that are key to forming social relationships with other people in that environment. This impact of the environment was identified throughout Section 4.4.2. and 4.4.3 where the sub-themes of Social Environment, Social Opportunities, Educational Needs, Social Support and Social Experience all indicated aspects of the environment that had a positive impact on their social relationships and interactions. The FSP course had a range of social aspects associated with it and as such had a social influence on everyone in the program. In the interviews, the social experience that each person had during the time of the FSP course did play a role in the interaction and communication behaviour. All of the interviewees indicated that they did have a positive social experience as is

demonstrated in the examples given for Section 4.4.2 – Social Experience sub-theme. While undertaking their studies the participants were able to interact with each other both in and outside of class and as such were given the opportunity to form friendships. The positive social aspects were clearly universal for all the interviewees.

The environment, at least for the interviewees, could be considered to have been a positive one and as such they indicated that, while busy in their studies, they did have time to socially interact with each other both in and outside of class time. These social interactions led to the formation of social connections between the participants as can be seen in the social network analysis diagrams located in Appendix 2. Specifically it can be seen the difference between the initial connections shown in Appendix 2a and those of Appendix 2b. The social opportunities included not just the common study environment but also the living arrangements of many of the participants that included dorm and share house accommodation. These reported interactions were of a positive nature. The FSP course is aimed at promoting interactions between students, via combinations of group work and a few extracurricular activities. This allowed social bonds to be formed between the individuals. The responses from the interviews in relation to the experience between the Foundation Studies Program and the interviewees first semester at university indicated that there were differences in the environments. The educational environment that the interviewees experienced, once regular study in their first year of University study after they had completed the Foundation Studies Program had commenced, offered fewer social opportunities to interact with their fellow students, as indicated in Section 4.4.2 – Social Environment and Social/Cultural Experience sub-themes. This was due to the way in which many university courses are delivered. Having a lecture without interaction, or disparate tutorials does not encourage interaction between students in the same way the FSP course did. The usual delivery of learning material using lectures and tutorials can at times isolate students from direct interaction.

The literature on social interaction does identify the importance of environmental conditions as factors that influence the formation of social relationships (Kelley et al, 1983; (Dykstra, 1990; Fischer & Oliner, 1983) and the outcomes from this research support this basic determination. This is also supported by the supposition by Milardo & Wellman (1992) that social context is important in relationship formation. This research study however does not cover in detail the specific influence of the social experience that individuals have and how that impacts social relationship formation. While it is known that humans seek to form relationships with other people as part of our human nature (Berscheid & Peplau, 1983) and that social opportunities are desired (Dykstra, 1990; Fischer & Oliner, 1983), the importance of having a positive social environment that promotes positive experiences appear to be an influencing factor.

### **5.12.2 Social and Educational Needs**

Another environmental influence is the social and educational needs of an individual as indicated throughout Section 4.4.2. This study has been conducted within an educational environment which in itself is an influencing factor on the outcomes from the research. The participants are students and as such they all have an existing, if not varying level of, educational focus that influences their actions although this may not be a student's primary focus and reason for studying the Foundation Studies Program. The educational and social support that is needed influences the behaviour of the participants, for example there are times when participants required assistance and so they would seek out others to help (ask questions, group study etc) as indicated for example in the Educational Needs sub-theme in Section 4.4.2. This need for support is the key to being an influence in getting students to work together and ask for assistance when needed. When help is needed the environment plays a role. For example, students who were both living and studying together indicated that this situation made it very easy for them to seek assistance when they had a study related problem or just had a need for social interaction as was specifically indicated by interviewee B and interviewee D under the same Educational Needs sub-theme mentioned above.

Assistance and support is an important part of both life and education (Mehl et al, 2010). It is especially important for international students as it has been identified that meeting their social support needs is key to their educational outcomes (Ong & Ramia, 2009; Hughes, 2005). While international students do seek support from family and friends back in their home countries it is the local relationships that they form that are the most important to educational outcomes (Ang & Liamputtong, 2008; Campbell, 2004; Pearson & Beasley, 1996). Universities do understand that international students face different challenges compared to local students (Rodan, 2008; Pearson & Beasley, 1996) however they often struggle to sufficiently support them due to the diverse backgrounds and needs of these students (Hughes, 2010; Sackers, Secomb & Hulett, 2008). While it is known that local support is essential, Universities may be better served by providing an environment that encourages social interaction with other students by making this an aspect of how classes and the material is taught. The time available outside of class can be restrictive due to study loads and issues around personal confidence that may prohibit some students from being proactive in developing local social relationships (Berscheild, 2010), so combining social interactions and educational delivery together may further help to foster local support networks.

In the analysis of the interview data there were differing primary motivations for the interviewees, as indicated in Section 4.4.2 – Motivation and Focus sub-theme. For some, further education and performing well in order to get into their university

course was the primary motivation, for others this was not the case. The other key motivations identified were improvement in English ability, indicated by interviewee F; and interacting and being social with others, indicated in the Social Opportunities and Social Experience sub-themes in Section 4.4.2. These motivations meant that social interactions were sought and were the preference in terms of time usage while the educational focus meant that social aspects were not sought out, study was the focus instead. For those who had an educational focus, social interactions were a little more difficult because study is generally an individual activity unless group study is undertaken or assistance is sought.

International students who come to Australia to study do so for a variety of reasons that are not always directly related to education and study. While an overseas degree is seen as beneficial (Storch & Hill, 2008; Dobson & Holtta, 2001) there are other reasons such as the Western experience, development of English language ability and to prepare to live and work in that country (Davies, 2010; Jackling, 2007; Harman, 2004; Kemp, Madden & Simpson, 1998). These motivations appeared to play a role in the relationships that were formed with those seeking higher educational outcomes interacting and forming relationships with other high performing students. While not clear from the research outcomes, students with less academic focus may have not felt it as necessary to connect with others as they did not need or want to pursue further relationships were needed. The interactions recorded in this research are supported by the social network theory in that similar motivations and characteristics are factors that attract people together (Kilduff & Tsai, 2003; Cartwright & Harary, 1956; Festinger, 1954;). Other factors such as the emotional, cultural, language, gender and interpersonal factors (Smith, 2010) would also have been influences in determining relationship formation in cases where those factors were too big of a hurdle to overcome even if further educational support was provided.

### **5.13 Chapter Reflections**

This chapter interpreted and discussed the results that were obtained from the analysis of the survey and interview data covered in Chapter Four. The chapter broadly covers the outcomes in relation to the international student participant group, their social relationships and social interactions with each other and the role of and usage of Facebook.

During their time studying together in the FSP course, the international student participant group formed broad and complex social relationships with each other. The social environment provided by the FSP course strongly encouraged the formation of those social relationships by offering positive time, opportunity and location factors to

the international students. The formation of these social relationships is known to offer a source of social support therefore it is believed that it would be beneficial for universities to offer greater social interaction opportunities to their students.

Social relationships existed between a vast majority of the research participants, the level of recognition of those relationships varied with large number of one-way and two-way connections being identified. While the social relationships were broad and complex there was still evidence of the formation of clusters around similarities in language and culture. Some of the participants were able to broaden their social relationships beyond those clusters and this appeared to be due to their higher level of English and their broader cultural experience.

The outcomes from the data analysis strongly indicate that the social interactions of the international student participant group were influenced by a range of different factors. These factors included the nature of the relationships participants shared with others; the level of convenience offered by an interaction mode and situation; and the influence of the social and geographic environment. Convenience was determined to be a major factor in interactions within the international student participant group. Being geographically co-located for the duration of the FSP course presented a high level of convenience by which to interact. In situations where the research participants were not geographically co-located, technological means of interaction also offered a high level of convenience. The particular technological systems used to interact varied based on who they wished to interact with and the situation motivating the interaction.

It was identified that Facebook was widely used by the international student research participants as it offered a high level of convenience by which to interact and stay socially connected to the other participants. While Facebook was a widely used and convenient mode for interactions between the FSP students, it did not appear to meet all of their technological based interaction needs. Due to this Facebook was one of a range or suite of technology based modes by which interactions occurred. The choice of which technology based modes to use is strongly influenced by the broader social relationships.

The social environment of the FSP course appeared to present a level of social pressure towards the use of Facebook that strongly influenced this choice by those who were not users before the commencement of the FSP course. Accordingly there are indications that at the conclusion of the course, Facebook use decreased due to a reduction in this pressure.

# Chapter Six

# Research Findings

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## 6 Chapter Six - Research Findings

### 6.1 Introduction

This section discusses the outcomes that have been obtained from the undertaken research. These outcomes have been identified as the key results that answer the research questions. This chapter has the following sections:

- Section 6.2 restates the research questions and objectives driving the research;
- Section 6.3 provides information regarding the presentation of the research findings. The key findings for this research are presented in a logical order designed to improve readability and allow each finding to build on the next;
- Section 6.4 presents Key Finding One which is a graphical model representing the factors influencing the social interactions of international students studying in Australia. The model identifies the interaction initiators and the three factors that influence if and how an interaction will take place;
- Section 6.5 presents Key Finding Two which is the recognition that the strength of the social relationships of international students exist on a scale from strong to weak. An important aspect of this finding is the recognition of the moderate strength relationships that exists between the poles of strong and weak not explicitly identified in past research;
- Section 6.6 presents Key Finding Three which graphically represents the role of Facebook in the technological based interactions of a geographically co-located group of international students. It identifies Facebook as one mode in a suite of technology based modes of interaction used when there are barriers to face-to-face interaction;
- Section 6.7 presents Key Finding Four which identifies that the importance of Facebook to a social relationship is dependent on the strength of that relationship;
- Section 6.8 directly answers the research questions in the overall context of the research. The aim was an investigation into the role of Facebook in the social relationships and social interactions of international students studying in Australia; and
- Section 6.9 briefly reflects on the material covered in the Findings chapter.



## 6.2 Research Questions

This research set out to investigate the role of Facebook in the social relationships and interactions amongst international students studying in Australia, to this end the following research questions and objectives we investigated.

Q1. What is the role of Facebook in the formation and maintenance of social relationships amongst geographically co-located international students?

- Ob1. To determine what social relationships exist between a group of international students.
- Ob2. To determine the characteristics influencing the formation of the social relationships between international students.
- Ob3. To identify how the social relationships between international students are maintained.
- Ob4. To determine who uses Facebook and how the overall use of Facebook changed over time.

Q2. What is the role of Facebook in the social interactions amongst a geographically co-located group of international students?

- Ob1. To determine how interactions amongst a group of international students are undertaken.
- Ob2. To determine the factors that influence interactions between international students.
- Ob3. To determine the role of Facebook in the interactions between international students.

## 6.3 Presentation of the Research Findings

The key findings from this research investigation are discussed in relation to the social interactions and social relationships of a class of geographically co-located international students. The findings concern both the nine months spent undertaking a common course of study and the following six months after the course's conclusions. The course of study was the Foundation Studies Program (FSP), a University preparation course taught at the University of Tasmania.

The key findings for this research are presented in a logical order designed to improve readability and allow each finding to build on the next. The first two findings relate to the broader social interactions and social relationships of the international student participant group. The last two findings narrow the focus of the research and relate

specifically to the role of Facebook in the social connections (social interactions and social relationships) of the international student participant group.

This research uses specific definitions of the terms social connection, social relationship and social interaction that are important to note. A social connection is defined as an inclusive term referring to both a social relationship and a social interaction. Greater detail regarding this usage is available in Section 1.4.

## **6.4 Key Finding One – Factors Stimulating and/or Inhibiting Social Interactions**

*The social interactions between individuals involve complex processes influenced by a broad range of factors. In relation to this research investigation, when interactions were initiated within educational, social and proximity contexts, there were three primary sets of factors that were most influential on whether the interaction continued and the choice of method used for the interaction. These factors can be usefully grouped into three categories of 'Interaction Convenience', 'Environmental Influences' and 'Relationship Status'. The factors in these three categories both compliment and conflict in their promotion and/or inhibition of interactions.*

This first key finding to be generated from the research relates to the social interactions of international students. This finding relates specifically to a geographically co-located group of international students and the factors that influence their interactions with each other. This finding has been derived from all three data analysis techniques.

The descriptive statistics indicated that there were social, educational and proximity motivations underlying the interactions between international students. These survey analysis results also indicated that both face-to-face and technological based means of interactions were used in these interactions. The social network analysis diagrams reinforced the existence of a complex web of one-way and two-way relationships existing between the research participants. These relationships were not universal between all participants with the two-way connections indicating a stronger relationship compared to the one-way due to the lack of reciprocity of the uni-directional connections. In addition the connections were not consistent over

time; some stayed consistent while others degraded. These elements strongly indicate that the types of relationships that existed would vary, thus so too would the type and nature of interaction. The analysis of the survey data however did not offer any insight into the factors that influenced the interactions.

It was the analysis of the semi-structured interviews that were able to identify factors that influenced the choice of how and whether an interaction proceeded, see Section 4.4. The varied relationships that existed between the participants have been interpreted to mean that even if an interaction was required, for example needing to co-operate for group work, this does not guarantee an interaction will occur.

Figure 6.1 provides a graphic representation of the interaction process that appears to have been taking place between the international student research participants during and a short time after studying together in the FSP course. The model represents the initiators, factors that influence if the interaction continues and which type of interaction does or does not take place. The model is created from the perspectives of one individual initiating and undertaking an interaction with another individual. This approach does not discount group interactions but instead takes group interactions as a collection of individual interactions. The model still holds true in a group setting as an individual will still go through the stages identified in Figure 6.1 below. The model also recognizes that in any situation motivating an interaction, each individual is undertaking a consideration process on whether or not to interact and how that interaction should occur.

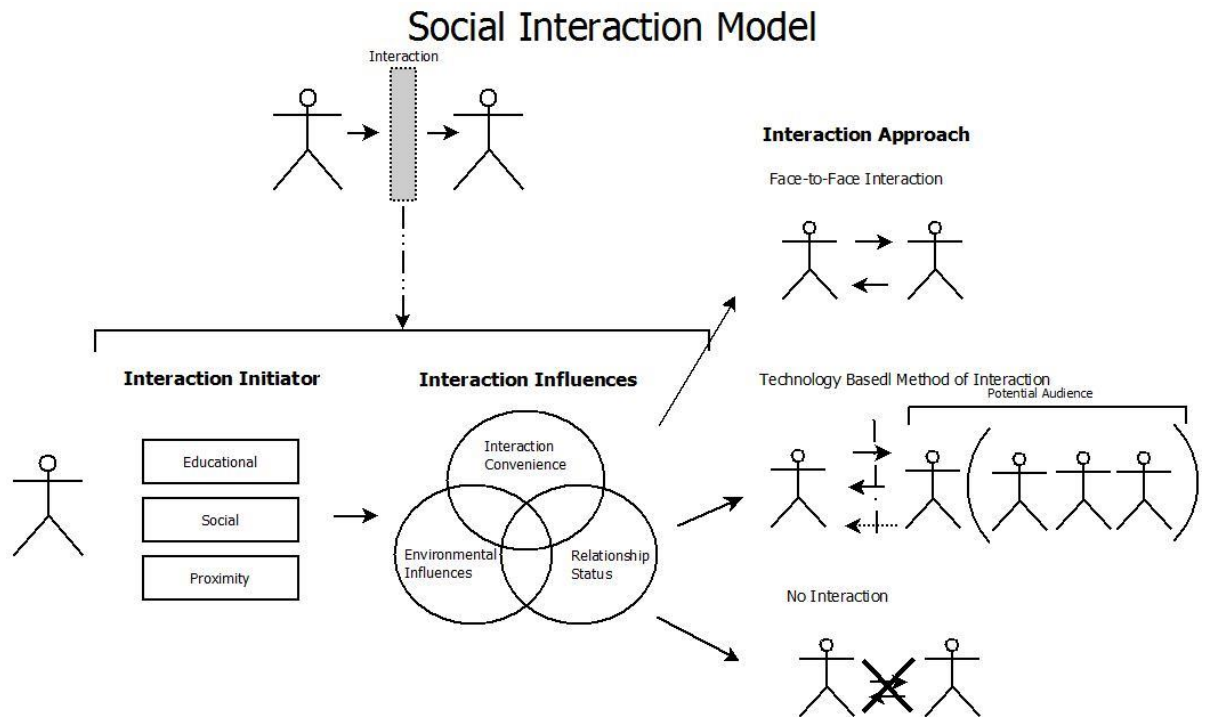


Figure 6.1 Social Interaction Model

#### 6.4.1 Social Interaction Model – Interaction Initiators

The first elements of the model are the interaction initiators. These are the motivations and reasons that underpin the interactions between two individuals. Individuals will often find themselves being motivated to interact with others and this research identified three broad categories of situations that would initiate an interaction. The factors have been categorised into three elements of educational, social and proximity. This first stage of an interaction only identifies the broad reasons why an interaction may occur. It is important to note that the interaction initiators only present reasons and motivations and do not include any specific action that might lead to an interaction.

**Educational:** The first factors that may lead to an interaction are those that have an educational focus. These are the factors specifically related to the educational needs and requirements of the participant. For example, a student may require educational assistance with an assignment and as such this may lead them to look for an opportunity to ask for help from another student. It is this need that is motivating the individual to look to initiate an interaction with another individual.

As the research was undertaken within a tertiary environment relating to international students, their educational needs did play a role in motivating their interactions with each other. These motivations may include group work requirements, seeking of

educational assistance and the transfer of educational information to fellow classmates. At the beginning of the FSP course, those students without pre-existing social relationships would have been motivated to a great extent by the educational requirements to interact with each other. This educational driver for interaction is an important initial aspect that can lead to the development of a social connection with another individual. The educational motivator would be much less of a factor once a common course of study had concluded.

**Social:** These are the factors influenced by the social aspects associated with a particular environment. These are primarily driven by the needs of students to interact with other people for purposes outside of their need for educational assistance. For example, an individual may be invited to a social gathering with others. This presents them with an opportunity and motivation to interact, should they pursue it. Social motivators are those factors that are brought about by the natural social nature of the environment in which an individual is a part.

The research was undertaken in an environment that offered and promoted social interactions between the participants. The common learning location, relative isolation from other university students and a need to spend a lot of time together created and promoted the social environment and associated social interaction requirements. This interaction initiator would likely be the strongest once the study course had concluded and there was no educational need to interact with other students.

**Proximity:** These are the opportunistic factors that cause situations where social interactions might be required without any specific pre-existing determinant due to the proximity of two individuals. Proximity motivators are those reasons to interact that come about due to chance and circumstance and are heavily influenced by geographic proximity, being present in the same local space. When geographically co-located, there will be times where an individual will unintentionally meet with someone else they know and therefore may feel a certain amount of pressure to interact in order to be social and friendly.

For example; two students who meet in a hallway, see each other at the bus stop or are part of a larger social group that socially requires interactions to occur. These situations occur and present a type of social pressure where an individual may feel that they need to interact with the person they know due to their proximity to each other. These types of interactions may form the basis for future 'social' motivators or may be short-term and limited in duration and meaning.

The interaction initiator stage only identifies the motivations that may lead to an interaction. These factors can be considered the psychological aspects leading to a

possible interaction. Therefore once there is a reason for an interaction to occur, the next stage comes into play. These are the considerations that determine whether or not interaction proceeds and this is represented in the model by the interaction influences in Figure 6.1

#### **6.4.2 Social Interaction Model – Interaction Influences**

The next stage of the interaction model is the interaction influence stage. This stage occurs once an individual has a motivation and/or reason to interact with another individual. Even though there is a reason that initiates an interaction, there are still considerations that determine both if the interaction will proceed and how the interaction will occur. Interaction influences relate to the broad range of factors that influence if and how interactions occur as there needs to be more than just a motivation for an interaction to occur, there are also broad overlapping factors that both compliment and conflict with each other in determining if the interaction continues beyond just the need.

From this research, these factors were able to be grouped into three broad categories of interaction convenience, environmental influences and relationship status.

**Interaction convenience:** relates to the factors that influence the overall convenience associated with the interaction. Convenience is determined by a range of factors such as location, available communication modes, amount of available time and language ability. The greater the convenience the more likely the interaction will proceed. Convenience is associated with the amount of time, and effort that an individual is willing to put into undertaking an interaction. Highly convenient interactions require little time and effort to undertaken and thus are more likely to occur, even when the other environmental and relationship influences are considered.

**Environmental influences:** relate to the external factors from the physical and technical environment that influences an interaction. These include aspects such as the physical location of the individuals involved, the opportunities for interaction, the requirement for interaction and nature of the message. An environment can provide opportunities and barriers to interaction between two individuals. Aspects such as being co-located or having a common course of study provide motivators that promote interactions. This is likely why interactions and social connections can break down once students are no longer living or studying together. Technology and its availability also presents an environmental influence. Skype and Facebook are both widely available methods of interaction provided by having access to the internet. In situations where they are not available, as in countries as China or areas with poor internet infrastructure, not having access restricts interactions.

**Relationship status:** relates to the nature of the relationship between two individuals that will be involved in the interaction. These include aspects such as the strength of the relationship, the cultural similarities/differences, the type of interaction desired and the possible generational and cultural differences. Interactions with those whom a strong relationship is shared are more likely to occur and can even help to promote interactions with others especially in a group situation where those involved would have differing strengths of relationship. It is important to note that interactions themselves can have their own influence on the relationship as the more often an interaction occurs and the nature of that interaction can both build up or damage the strength of a social relationship.

The factors above are inter-related and no one factor is necessarily more influential or important than any other. For example, an interaction that is low in convenience can still occur between those who share a strong relationship. Those who are geographically co-located have a greater chance of interaction due to the convenience that is provided. This is because it is both external aspects and personal internal aspects that influence interaction. This makes guaranteeing an interaction difficult even if all factors are working together promoting a social interaction.

#### **6.4.3 Social Interaction Model – Interaction Approach**

Once the first two stages have been considered, the final stage is the determination as to whether the interaction will proceed and which method will be used. With the interaction initiators and motivators having been considered and evaluated by an individual, the final stage presents three possibilities: first that the interaction does not occur; second that an interaction will occur face-to-face in a common geographic location; or an interaction will occur via the use of some technical means. The options are as follows:

**Face-to-Face Interaction:** The interaction will be undertaken in a common physical location. The interaction will be synchronous and involve a traditional back and forth between those involved. This approach requires an investment in time and effort to undertaken as a common location and language is needed.

**Technology Based Interaction:** The interaction proceeds and is facilitated by the use of some technical means. To a certain extent, technology allows barriers in time and location to be overcome. Interactions can be real-time or asynchronous and be undertaken while physically separated. This approach can also allow interaction to occur on a one-to-one, e.g. real-time chat, or one-to-many basis, for example, posting a status update on Facebook.

**No Interaction Occurs:** In this instance the interaction will not proceed. Despite their being a motivation and need for an interaction, a combination of convenience, environment and relationship factors will prevent this from occurring. Interaction can be prevented due to either an inability to interact, for example being geographically separated; or a lack of social driver, such as low self-confidence and weak relationship.

For the international student group that took part in the research, there was an indicated preference for face-to-face interaction. Therefore, when possible, that would have been the mode by which interaction occurred. Technological based means of interaction that was able to be used when geographic barriers prevented face-to-face interaction. Unlike face-to-face interaction that involve a back and forth exchanging of messages, technological based means can allow both one-way and two-way interactions to occur. For example, the use of Facebook to browse the public posts of others is a passive one-way interaction while a Skype chat is an active two-way interaction.

Figure 6.1 represents the interaction processes of a class of international students studying in a common geographic location. The model identifies the key characteristics that are at play in their interactions with each other that determine if and how they are undertaken. It is well established that the educational outcomes of international students are influenced by the local support networks that they are able to develop with other students (Abdullah, 2011; Russell, Rosenthal & Thomson, 2010; Ang & Liamputtong, 2008). As interactions are key first steps in developing these support networks, understanding the factors that influence interactions is important.

In the educational area, the social connections between students are an influence on their academic performance. While it is important for interactions between students to occur, educational institutions cannot control the personal aspects (for example the psychological, physiological and emotional) of an individual, however they can further encourage interactions by promoting them via their design of external factors such as how classes are undertaken and the amount of required interaction between students. By providing interaction requirements and minimising barriers, it may be possible to promote greater opportunities for students to form social connections with each other and thus generating an educational support base.



## 6.5 Key Finding Two – Understanding the Role of Relationship Strength in Social Support

*Social relationships are composed of complex ties between individuals. These ties can vary in strength depending on a range of factors such as level of interaction, duration of the relationship and the social support needs. In relation to this research, the social relationships that exist between students range in strength from strong to moderate to weak. While past research has implied that relationships can be considered as either strong to weak, the existence of a moderate middle-ground has not been clearly identified. Similar to strong relationships, moderate strength relationships offer a key source of support while studying yet have differing characteristics in terms of their recognition, types of interactions and duration once a common course of study has concluded.* It is the common location and purpose between individuals that leads to the formation of a moderate category.

A second key finding to have been generated from the research is associated with the representation of the strength of the social relationships that exist between international students. The research identified that the relationships between the students could be identified as either strong to weak. The interaction between relationship strength and the use of Facebook by international students will be discussed in more detail in sections 6.6 and 6.7.

The descriptive statistics provided only minimal supporting evidence towards the existence of a range of social relationships existing between the student participants. This evidence was primarily based on them having some, but not all, of the other participants in their Facebook friend's list and the interactions with each other while geographically separated during the mid-year holiday.

The primary sources of data supporting this finding were the social network analysis diagrams. These diagrams gave a clear indication of a complex web of two-way and one-way relationships being in existence and that these connections formed and were maintained over the duration of the research investigation. The two-way connections were considered to be a general indication of there being a 'strong' relationship as both individuals involved in the connection recognised the other. The one-way connections were considered to be a general indication of a moderate relationship as only one side of the connection recognised it. It was these connections

that were considered to be an indication of a 'moderate' strength. The incidences where there was no connection indicated between any two individuals was considered an indication of a 'weak' relationship. This was due to the nature of the Foundation Studies Program allowing all participants to be able to know each other through their common course of study. Thus, the data from the social network analysis diagrams was considered to be a strong indication of a range of social connections that have broadly been classified as 'strong', 'moderate' and 'weak'.

The model in Figure 6.2 is a graphical representation of the relationship strength scale identified in this research. It represents the varying strength of the relationships and the relative number of relationships of that strength; the wider the cone segment the greater number of connections of that type exists. A triangular shape has been used to represent the social connections of an individual where, comparatively, they have a few strong relationships, a greater number of moderate relationships and many more weak relationships. While past research only identified relationship strength as being strong or weak, this research expands on this by identifying a third category that falls between strong and weak and this is graphically indicated in Figure 6.2. The reason for this breakdown is related to the time and effort required to maintain these. Strong relationships require a greater investment in time and effort in comparison to moderate relationships while weak relationships exist through convenience and environmental opportunities.

The intersections between the strong, moderate and weak relationships are represented by the separating lines. These lines indicate that while strong relationships can often be clearly defined, the boundaries between the moderate and weak relationships are less clear, hence the dotted jagged boundary line. In addition, the boundary between a weak relationship and no relationship is also difficult to define and this why the cone represents this with a large area that fades out.

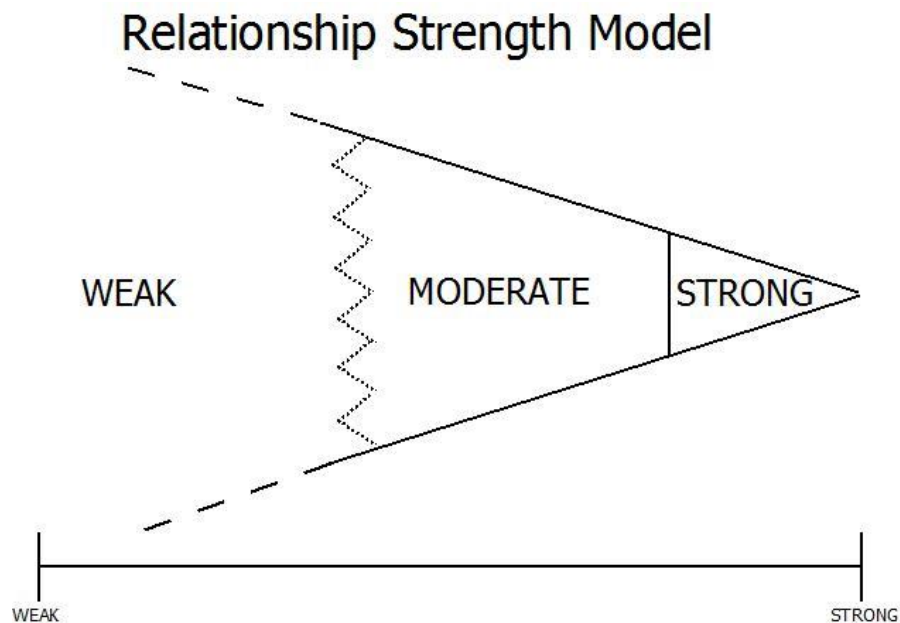


Figure 6.2 Relationship Strength Model

### A Strong Relationship

A strong relationship between two individuals is one in which the person has a well-defined friendship with the other person that can be identified by both parties. This relationship is either a pre-existing strong relationship or has developed over time due to the common characteristics and personality compatibility. The interactions between two individuals of this strength would be frequent and of an intimate nature and offering, if not educational support, a strong level of social support. These relationships are likely to continue when there are no longer environmental factors in play promoting interaction, such as those present when studying together in a common geographic location. These types of relationships are relatively few in comparison to the number of other people known however they are well-defined by both parties and the label of 'close friends' could be considered appropriate. These relationships offer the broadest social and educational support.

### A Moderate Relationship

A moderate relationship is one in which a person would say they have some form of friendship with the other person yet this may or may not be easily recognized or reciprocated. As opposed to being called a strong friend the broader term 'friend' is a more accurate description of the relationship. These relationships are generally not well defined in the minds of the individuals involved and have been created and

maintained primarily through the environmental opportunities and promoters that are present. A strong educational focus is likely the main motivator in their creation, either through specific educational support needs or the broader common educational environment. This common educational purpose and study location can be broadened to indicate that a moderate category of relationship is likely to exist in a situation where a group of individuals are co-located for a common purpose. The interactions are likely to be friendly but not of a deep personal nature. These relationships are likely to fluctuate over time between the moderate and weak variety dependent on the environmental opportunities that allow the interactions between them to occur. While there is a relationship present that would be recognised to some extent, over time and without a necessity to interact these relationships are likely to degrade as they become less convenient to maintain.

### **A Weak Relationship**

A weak relationship is one in which a person knows who another person is but there is minimal interaction beyond that which is required by the environment, such as in the case of studying or working together. These relationships are ill-defined by an individual and being called 'acquaintance' could be considered to be a more appropriate label for them. In an acquaintance relationship it is likely that neither party will specifically identify the other as taking part in any regular interaction. In essence these relationships are made with others with whom people have just met or interacted with and can just as easily disappear. However, as these relationships are weak and not considered of importance to an individual then there is little issue with them not being maintained especially once the factors that promote their relationship such as an educational opportunity and need are no longer present. These relationships offer little specific educational or social support and exist due to convenience or a specific need to interact based on educational requirements such as group work or classroom based activities.

Research by both Granovetter (1973) and later Haythornthwaite (2005) identified that there are differences in the strength of the social relationships of individuals. Whilst their work implies that the differences between a strong relationship and a weak relationship exist on a scale, they do not identify or label the middle ground. This research identifies the existence of a moderate social relationship and that there are differences between this level and the strong/weak relationships. The differences are significant when it comes to the importance of the technological based modes used to maintain that relationship. This is covered in more detail in the next section.

It is the university environments that are well suited to the formation and maintenance of relationships of various strengths. Being located in a similar physical location while studying allows an individual to be exposed to a large number of other students of whom relationships can be formed. In a similar relation to the diagram in Figure 6.2, the relationships that are able to be formed are likely to include a relatively large number of weak relationships with less moderate and even less strong relationships. Recognition of the environment provided by universities for the formation of relationships is important especially with the continual increase in e-learning that uses online and off-site delivery of content. While this provides flexibility for students in when, where and how they study, it could however greatly restrict the opportunities to meet with others and thus the potential educational support that comes from such relationships. It would be recommended that the potential isolation also be a considered factor in the delivery and offering of degrees and courses away from a central geographic location.

## **6.6 Key Finding Three – The Role of Facebook in Social Connections within the Mix of Other Available Technical Modes of Interaction**

*There are many technology based modes of interaction that offer diverse approaches to interacting with other individuals. Facebook is one such popular and widely used mode within Australian tertiary education environments. In relation to this research, Facebook was found to have been widely used by the international student participants however its popularity did not limit student choice of technology based modes when considering interactions. The choice of which mode of interaction was selected appears to be dependent on the type of interaction desired, the strength of the relationship and the amount of time and effort willing to be dedicated towards it. Facebook is perceived as a socially focused digital social network that offers convenience and efficient modes of interaction with a broader social audience. However, this social perception may be concealing Facebook's ability to support more intimate interactions.*

A third key finding from this research is in regard to the role that Facebook plays as a mode of interaction. Facebook is a digital social network that is designed to allow

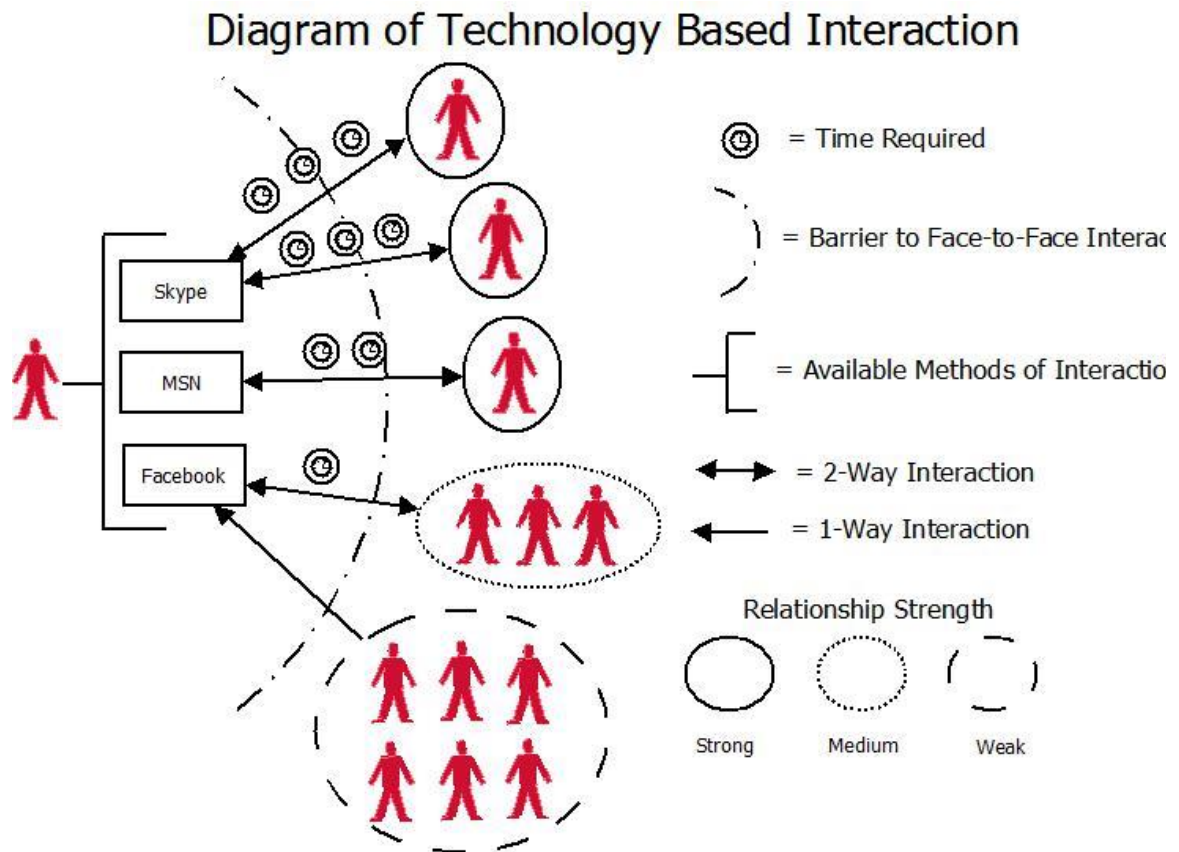
individuals to digitally formalise their social connections and to interact with others. While Facebook was popular and widely used by the international students investigated in this research, it was found to be but one of a suite of technology based modes of interaction that are available and as such each of these different modes have differing characteristics.

This research has found that for a geographically co-located group of students, Facebook plays a role in bridging the barriers to interaction that prevent face-to-face communication from occurring. This is a common role for many technology based modes of interaction however the characteristics and use of each mode can differ depending on the social situation and the relationship that exists between two individuals.

The descriptive statistics identified that a wide range of technology based modes of interaction were used by the research participants in addition to their use of Facebook. The survey data also identified that different modes of interaction were preferred to be used when interacting with different groups of people. The social network analysis diagrams identified that Facebook was used by a majority of the research participants yet despite this there did not appear to be a direct connection between Facebook usage and those whom they shared a relationship with. The interview data contained references from the interviewees stating that they used different technology based modes to interact with other students with convenience being one particular factor considered in their choice. In addition, this finding is supported by the outcomes from Finding One and Two.

The model displayed in Figure 6.3 graphically represents the range of technology based modes used by an individual and the factors influencing their choice and use of such modes. The telephone is not included in this model as the analysis of the survey results in Figure 4.18 indicated that only four of the 50 students used a mobile to interact with other participants and friends. Instead, internet technologies, such as those indicated in the model below in Figure 6.3, are more popular and thus appropriate to include.

A barrier to face-to-face interaction can exist in any situation where interaction is desired but is unable to be undertaken in person and so either a technology based mode must be utilized or the interaction will not take place. The barriers are commonly geographic in nature where one individual is not in the same geographic space as the other person they wish to interact with. These barriers can range in size from each individual being located in different countries to being in different room at the same physical address. Barriers can also be non-geographic in nature such as in situations where other interaction is not able to be undertaken face to face, such as in classroom situations.



**Figure 6.3 Diagram of Technology Based Interaction**

Figure 6.3 is a graphical representation of the association between the technological based modes of interaction that a person will use in order to interact with others that they have a social relationship with. While face-to-face interaction is preferred it is not always possible to interact in this way and so when face-to-face interaction is not available then an individual will select a mode based on a range of possible options. The mode selected is based on a range of factors that are considered by those initiating the interaction.

### **1. Time Required to Use the Method**

Each technological based mode of interaction requires an investment in time for it to be used. This time requirement is based on the how much effort and focus is required for the interaction. More intimate and synchronous interactions on a one-to-one basis require a greater investment of time compared to broader ranging forms of interaction such as Facebook that allows interaction with many people at the one time and in an asynchronous manner. Other modes, such as the examples of Skype and

MSN located in Figure 6.3, require more time in order to interact with others as their primary approach to interaction is on a much smaller scale. For example, Facebook and MSN both have synchronous chat facilities but unlike MSN, Facebook has other interaction methods built in, such as public posts, that require less time to utilise. This is due to the primarily synchronous nature of those modes of interaction that require both users to be present and active. In comparison to Facebook, these modes offer a broadly more intimate type of interaction as their focus.

## **2. Barriers to Face-to-Face Interaction**

Technology based modes of interaction tend to be used when there are barriers that prevent face-to-face interaction from occurring. These are most commonly differences in geographic location but can also include situational factors such as students being in class and not being allowed to talk. When barriers to face-to-face interaction are in place and interaction is desired then a technological based mode will be pursued. The use of technology based modes to overcome these barriers is not a guarantee of interaction as geographic boundaries themselves may indicate that no technological based mode is available. In addition, while technology based modes are available to bridge barriers, other factors are likely to still be considered, such as the associated cost, time and money, of that particular mode. Facebook's nature as a technology based mode, being widely available via fixed line, wireless and mobile Internet, offers a high level of convenience and cost-effectiveness. The common trend of making Facebook and other digital social networks available via mobile devices increases its attractiveness to users.

## **3. Available Interaction Modes**

Those that are looking to undertake interaction have access to a range of modes that they can use and this allows them to choose which mode best meets the interaction requirements. The modes available are dependent on it being used by those involved in the interaction. While there are many technology based modes available, which specific modes are common between users is dependent on those users. Facebook's popularity makes it a highly attractive common technological based mode while a less popular or more restrictive mode, can reduce its effectiveness, such as with the China based Renren.

## **4. Type of Interaction**

Interactions can be either two-way or one-way. Two-way interactions require a level of reciprocity and time commitment with messages moving back and forth while the interaction is underway. One-way interactions do not require reciprocity and since there is no ongoing requirement for continuous interaction, these modes are time



efficient though also less meaningful in comparison. Facebook allows both two-way and one-way interactions to occur between users. Two-way interactions take the form of personal messages and posts that elicit a response. One-way interactions occur via public posts that are viewed by others but no response is acknowledged.

### **5. Relationship Strength**

Relationships between two individuals can vary in strength and it is this strength variation that determines the type of interaction desired and the amount of time and effort that an individual is willing to invest. Stronger relationships tend to favour a greater investment in time and effort in interactions that are more intimate and meaningful to both people involved. Individuals with weaker relationships are less likely to invest time and effort into an interaction therefore broader and easier interactions will be preferred.

In this situation, Facebook offers a time effective method of interaction with others. It is a way to overcome geographic barriers and is most often used for general interaction with others. For more intimate and specific forms of interaction then other more direct modes will be used.

Technology based modes of interaction are now a regular part of how students within Australian university environments communicate with each other. The wide usage and accessibility of Internet connectivity allows access to a diverse range of systems designed to allow interaction to occur. However, while the concept of interaction is common, the technological based systems that allow this to occur are diverse, each with aspects both similar and different from others. The choice of which technology based modes are adopted and the way in which they are used for interaction is determined by the users of such technological systems. Even modes that offer a range of interaction options may not be used as intended. Facebook, for example, offers personal chat to occur between users, however this will not preclude its use or the non-use of another mode such as Skype and MSN.

Facebook allows its users to interact using a range of tools, everything from wall and photo posts to private message and Skype integration. The outcomes from this research suggest that the more intimate methods of social interaction available in Facebook are ignored in favour of separate programs. This is especially evident in that Skype is available in Facebook yet was separately used by many of the participants. One potential reason for this may be the social nature of Facebook. The perception by users that Facebook is a socially focused program may be colouring their perceptions of it in relation to intimate forms of interaction. Thus because users can easily share and interact with a broader social audience, the personal tools such as Facebook chat and Skype integration may be concealed from their users.

It appears that the individuals are the ones who are in control and dictate how they use the interaction modes that they have access to. For educational institutions, such as the University of Tasmania that dictate the use of email as a primary mode of communication with students, difficulties associated with students not using those modes on a regular basis are likely to be recognized. Students are more likely to check their Facebook account than their university email. However, the approach of universities attempting to use digital social networks for interaction and communication may not be any more successful due to the lack of control they have over these systems. While Facebook is able to reach a wide student audience it is not used by everyone and there could be other issues associated with mandating its uptake.

## **6.7 Key Finding Four – Role of Facebook in the Maintenance of Social Relationships**

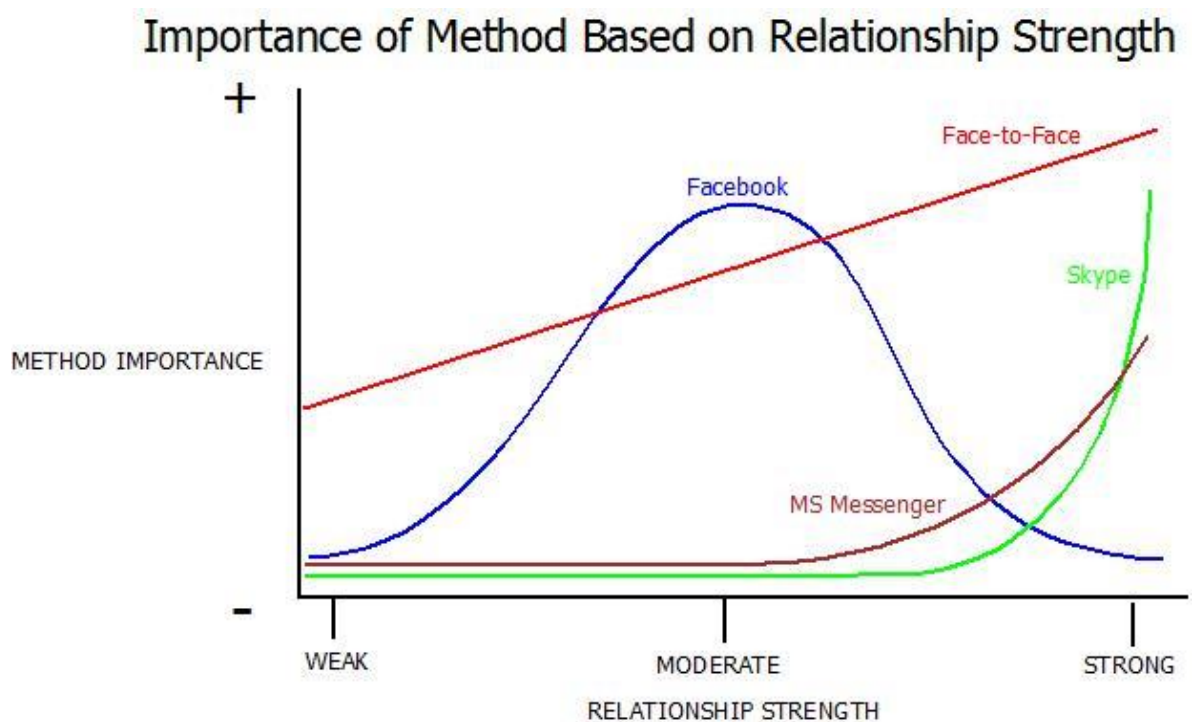
*Technology based modes of interaction are an important supporting element in the social connections between individuals. They allow social relationships to be maintained by allowing social interaction to be undertaken when there are barriers in place. Facebook is one such system that allows social relationships with others to be maintained. In relation to this research Facebook use appears to be most important for relationships classified as being moderate in strength as these relationships benefit most from the existence of convenient and time efficient methods of interaction that are popular and widely used. This finding does not imply Facebook is not used in social relationships of varying strength, only that its importance varies.*

As discussed in Section 6.5, there are three levels of social relationship strength that exist between one individual and another. It is well known that social relationships are influenced by many factors including personal, environmental and contextual (Berscheid, 2010; Kelley et al, 1983; Simpson, 1987). These relationships indicate that not all social relationships are the same and the strength of a social relationship influences how much time and effort a person is willing to spend in order to interact and maintain it. The most influential mode for creating and maintaining social relationships is face-to-face interaction however this is not always possible, so there are other modes that can be used to allow two people to interact with each other when there are geographic or other barriers in place. These are primarily technology based modes that are designed around allowing different types of interaction to occur

(DeSantis, 1990; McLaughlin et al, 1995). The research has found that for social connections, there is an association between the strength of the social relationship and the importance of a mode of interaction to the maintenance of the relationship. Essentially the mode that an individual will use to interact with another individual depends on the strength of the social relationship between those two people.

The descriptive statistics provided evidence of the types of technology based modes of interaction that were used by the international student participants. It also identified that while Facebook is widely used by a majority, how it is used and its frequency of usage varied based on geographic location. The social network analysis diagrams indicated that the relationships of the international student participants differed in recognition and strength and that there were not clear relationships between the high percentage of students using Facebook and their relationships with the other participants. The analysis of the semi-structured interview reinforced the interpretation that international students used different modes of interaction with each other depending on their situation and their relationship with others. It also clarified the reasons why Facebook was used for interactions. In addition, this finding uses the outcomes from previous Findings 1, 2 and 3 to support it.

Figure 6.4 is a representative diagram displaying the relationship between mode of interaction and the strength of the social relationship.



**Figure 6.4 Relationship Strength/Importance Model**

Figure 6.4 is not a statistically based model but rather a demonstrative model created to demonstrate the differences between a selection of interaction modes in relation to the strength of a relationship vs. the importance of that mode. This model illustrates the association between four popular modes of interaction: face-to-face, Skype, MS Messenger and Facebook. These modes have been selected as they have different characteristics from one another such as the time required for the interaction; the modes of interaction that are possible; and the size of the audience that can be reached at any one time.

What can be seen in the model is that in comparison to the other modes shown, Facebook has a higher importance for a user's 'moderate' connections. This is due to two primary factors: the time required; and the size of the audience. Maintaining a strong social connection requires a lot of time and so modes such as Skype and MS Messenger, which are designed around one-on-one interaction, are not efficient at maintaining connections with a lot of people as time is a limited resource. However, Facebook, due to its design around interactions with a lot of people, allows the maintenance of connections with many more people as activities such as posting a status update, uploading photos and replying to others are more time efficient. The design of Facebook and its ability to allow a person to interact in an asynchronous way allows the moderate connections to be maintained via keeping up to date with others.

In strong and weak social connections, Facebook is much less important. This research is not commenting on the level of usage of Facebook for the connections, only the importance. The reason the importance is not as high for the strong and weak connections relate to the relationship needs of strong and weak connections in comparison to moderate connections. For strong connections, there are other more suitable technologies available such as Skype and MS Messenger. These modes allow the more personalized interactions that are essential for strong connections to occur when face-to-face interaction is not viable. For weak connections, Facebook is less important as the connections are not considered valuable to the individual to an extent where maintaining them is a consideration.

To summarise, the first finding from this research is the identification of the relationship between the strength of the social connection between two people and the importance of the mode of interaction. As the time required to maintain a strong connection is high, technology based modes like Skype and MS Messenger are ideal but not practical for all connection types. Weak connections are generally not important enough to devote a significant amount of time to them. Moderate connections do require some time and effort to maintain therefore modes such as Facebook are appropriate as they allow a lot of interaction to be undertaken in an

efficient manner whether the effort is direct interaction or just being kept informed via posts and uploaded media.

This research has identified that while Facebook is a widely used and popular digital social network, its importance to the social relationships of its users is influenced by the strength of that relationship. While Facebook does succeed in allowing its users to digitally formalize their relationships with others, there is a potential issue with its long-term viability and attractiveness to its users.

Facebook's high monetary value is derived from its high user base and its ability to collect information and direct advertising to its users. However, if this value is to be maintained then it needs to attract new users and maintain its current user base. This could prove to be problematic in the future as moderate strength relationship maintenance may not be a great enough motivating factor to keep users from coming back to Facebook in the long term. The strong relationships, those that individuals are likely to value more and may be a greater drive toward continual usage, seem to be better served through other technological means of interaction.

Despite the large user base currently using Facebook, like MySpace and Friendster before, Facebook still faces potential threats from future social networking platforms that are better able to meet all of the social relationship needs of its users. These needs can not only be supported by having the tools available but also by ensuring there is a suitable perception regarding the use and availability of those tools. The key aspect is that the importance of a social system is not dictated by the number of users but by the importance of that system in relation to the social relationships of its users.

## **6.8 Answering the Research Questions**

This section of the chapter presents a discussion of the research findings in relation to the aim of the research and the research questions. The aim of the research was to:

“To Investigate the Role of Facebook in the Social Relationships and Interactions amongst International Students Studying at an Australian University”

### **6.8.1 Question One - How does Facebook Support the Social Interactions Amongst International Students?**

The aim of this sub-question was to determine the role of Facebook in social interactions of international students studying in Australia. The focus of this question was on identifying the factors that influence interaction behaviours and to place the use of Facebook into this context.

The results from the research identified that amongst the research participants face-to-face was the preferred mode of interaction. This is not surprising given the ample opportunities available and the educational requirements of the FSP course promoting interaction between research participants. When an individual wanted to undertake an interaction with another participant, there were three factors that were found to have influenced the decision to interact as well as the mode used. The three influencing factors were: the level of convenience associated with undertaking an interaction; the environmental factors that promoted and inhibited interaction; and the status of the relationship that existed between the individuals.

The three factors influencing the choice and mode of interaction between the research participants were 'Convenience of the Interaction', 'Environmental Influences' and 'Relationship Status'.

- 'Convenience' is associated with both the undertaking of an interaction and the mode that will be used. Factors that often influence convenience include the time required, the importance of the interaction, the reasons why the interaction is to take place and the mode available to undertake the interaction.
- 'Environmental Influences' are the geographic and location based factors that are at play in the undertaking of an interaction. Factors related to the environmental influences include the geographic location of the individuals, the extent to which interaction is required in the common environment and modes available to use within the environment.
- 'Relationship Status' relates to the type and strength of the social relationship between those who wish to interact. Factors associated with the relationship include how strong the relationship is, the importance of that relationship and the commonalities between individuals that can include common modes of interaction.

These three factors are inter-related and are implicitly considered before an interaction takes place. For example, an interaction between two individuals who do not have a strong relationship with each other requires a high level of convenience or necessity strongly associated with their geographic location before interaction will occur. An educational environment in which two individuals do the same class together and/or live in the same location will allow greater interaction compared to the situation once they no longer study together.

At the start of this section, it was noted that face-to-face interaction was the preferred mode of interaction for research participants. This is due to the high level of

convenience that studying together and being geographically co-located offers. However, when face-to-face interaction is not possible then technology based modes of interaction will be used instead. Technology based modes of interaction offer a greater ability to overcome the barriers that prevent face-to-face interaction. However, there is no one single technological mode that is used. Instead individuals have access to a suite of different modes by which to undertake interaction with others. Each mode has different characteristics that dictate which is chosen for interaction. Factors influencing choice include the amount of time required to use, the size of the audience that can be reached and how intimate the interaction can be. Another important factor is the perception of the tool. With Facebook being seen as a social technology, less social interactions or interactions of a intimate nature are not seen as being a suitable use, thus the social nature of Facebook may be concealing the wide array of interaction modes that are being made available. The choice of technological mode is influenced by the convenience it offers, whether the mode is used and available in the environment and the type of interaction desired which is based on the relationship.

In studying the role of Facebook in the social interactions of international students, it can be seen that it is one mode in the suite of technology based modes that are used when face-to-face interaction is not able to be used. It is the popularity and wide spread usage of Facebook, in Australian universities and also in many other countries, that makes it a common platform with which to undertake interaction with others. However its use for interaction is considered from the perspective of the three factors identified as playing a role in the social interactions.

The advantage of Facebook for the purpose of interaction is based around its wide-spread usage and its ability to allow an individual to stay up-to-date with other people in a convenient and time efficient way. Facebook allows interaction to occur in a range of ways from personal messaging to posting status updates to just browsing the updates from those in the friends list.

For universities, the popularity and wide-spread usage of Facebook has made it an attractive option for their own interactions with students. However, despite so many students using Facebook there are still those who do not and thus the use of Facebook for directing interaction with students is still problematic. University use of Facebook for broader interactions and general purpose promotion still remains the most viable option. It is unlikely that other traditional modes of direct student interaction, such as email, will be usurped. The reality is that Facebook is not the sole technological mode and other approaches will also be used for interaction depending on the situation and the consideration of the three factors identified above.

### **6.8.2 Question Two – What is the Role of Facebook in the Formation and Maintenance of Social Relationships amongst International Students?**

The aim of this sub-question was to examine what social relationships existed between the international student research participants and to place into context the role of Facebook in the creation and maintenance of those social relationships.

The research identified that the social relationships between the research participants were varied and complex with a range of one-way and two-way connections between the research participants. The complexity of these social connections and the large number of one-way connections indicated that while all research participants had social relationships with each other, these relationships were in most cases not formalised in the minds of the research participants. Instead participants were aware that they had relationships with others but it is the exact nature of those relationships that was ill-defined. What was clear was that culture and language played a role in the formation of the social relationships with the existence of clusters within the larger FSP course group.

While the clustering of participants confirmed that cultural and language similarities are considerations in social relationship formation, these clusters are influenced by the level of cultural experience of each research participant. When an international student lacks cultural experience of the country in which they are living, and/or cultures of those students they are studying with, then clusters based around culture and language will tend to form. In these instances, culture and language are similar factors that work together in making relationships with those with different backgrounds difficult to achieve. However, when an individual has a high level of cultural experience then culture and language then become two separate factors influencing the formation of relationships. Therefore, when cultural experience is high, language plays more of a differentiating factor. Conversely, when cultural experience is low then they become part of the same barrier to relationship formation.

The social relationships of the research participants were formed not only due to their cultural and language abilities but also due to the opportunities offered by the educational environment in which they were studying. The FSP course is a small and focused course that provides a lot of time and opportunity for the students to interact with each other and to form social relationships. These social opportunities were the largest influencing factor in the formation of social relationships.

This research identified that the social relationships of the research participants fell into a scale of strength ranging from strong to moderate to weak. The strength of the relationship was naturally occurring as any human relationship forms based on commonalities between individuals. This range of relationship strength matched that as described by Haythornthwaite (2005) with a key difference being that this research



has identified the importance of labelling and identifying explicitly a ‘moderate’ strength of relationship. While strong relationships endured and weak relationships ceased once the positive environmental influences were no longer present, the course of study together ended and the moderate relationships were mixed with some enduring and some ceasing.

During the FSP course, the time spent studying together was the largest influencing factor in not just the formation of the social relationships but also in their maintenance and continuation of these relationships. Once the program ended and the greater barriers to the maintenance of these social relationships developed then technological means of maintaining those relationships became more important. Interaction is important in the maintenance of social relationships and Facebook plays a special role in that it is most important for ‘moderate’ strength relationships.

One of the key uses of Facebook is to formalise and solidify the existing off-line connections that people form with others (Facebook, 2012). This was also true for the research participants however the importance of Facebook to them depended on the strength of their relationship. Facebook had minimal importance to the strong and weak connections but a high importance to the moderate connections. For moderate connections where both parties would like to stay connected then Facebook is very important as it allows users to keep up-to-date with these connections with minimal time and effort.

Overall the role of Facebook in the formation and maintenance of social connections is one in which it allows a convenient mode to formalise connections but most importantly is its role in maintaining connections once environmental barriers, such as geographic distance and time limitations, are in place. It is for the moderate connections in which it plays the greatest role by offering a convenient mode by which to interact and stay in contact with others.

### **6.8.3 Overall Findings in Relation to the Broad Research Objective**

The primary aim of the research that was investigated was:

“To Investigate the Role of Facebook in the Social Relationships and Interactions amongst International Students Studying at an Australian University”

The research results relate to the role of Facebook in the interactions of international students. Interactions between the international students were determined to be influenced by three overlapping factors: convenience of the interaction; environmental factors; and status of the relationship. The three factors implicitly influence the decision on whether or not an interaction will take place. It was

determined that Facebook is but one of a range of technology based modes of interaction that is used to interact when face-to-face interaction is not an option. Facebook can be a convenient and time efficient mode however its use, like the use of all technology based modes, depends on others using that mode as well. Facebook is widely used and so is the most convenient mode of interaction for international students in Australia. When international students change environments then the use of Facebook will change based on what is the most commonly used technological based mode in that environment.

This research supports that Facebook does play a role in the social connections (social relationships and social interactions) of international students studying in Australia. The first dimension of this result relates to the relationship between international students. While Facebook still plays the role of helping to reinforce connections formed offline, once geographic barriers are in place and face-to-face interactions become more difficult and time consuming then the importance of Facebook to the relationship becomes clearer. In that instance the importance of Facebook depends on the strength of the social relationship between international students. Facebook is less important for strong and weak relationships as strong relationships are maintained in other ways and weak relationships lack the importance to those involved. It is the moderate connections that Facebook is most influential on as it offers a convenient and time efficient mode by which to maintain the relationship.

For universities, Facebook does offer a mode by which they can broadly interact with current and potential students. However, despite its popularity Facebook is not used by all students and as such, using it as a more directed and official mode of communication poses the same issues and problems as other approaches such as email and university managed online systems. Facebook's more important role is one of relationship maintenance. Relationships formed at University offer a source of support and assistance for students while studying but may also have future benefits. These are likely to be in relation to the benefits that knowing others brings, such as employment opportunities, general support in life and on-going friendships.

Overall, Facebook does play a role in both the relationships and social interactions of international students studying in Australia. However the importance of that role depends on the strength of the relationship and how convenient Facebook is as a mode by which to interact with others. Therefore it is surmised that Facebook's role in relationships, and as a commonly used interaction mode, will change over time as the social situation of international students change. While Facebook remains a widely used technological based mode of interacting with others in Australia, it is likely to still be used by international students in the future however as has been seen by other social technologies that came before Facebook, this future use is not guaranteed.

## 6.9 Chapter Reflections

This chapter presented the key findings generated from the undertaking of the research and answered the research questions. The key findings were generated from the interpretation and discussion covered in Section 5, while the research questions were answered in relation to these outcomes.

There were four key findings generated from this research. The first was a model representing the factors that influenced the interactions between international students. The second was the recognition that the strength of the social relationships of international students range from strong to moderate to weak. The third placed Facebook into context with the technological based means of interactions used by international students. The fourth identified that the importance of Facebook to a social relationship is dependent on the strength of that social relationship.

In answering the research questions it was found that Facebook plays an important role in both the social interactions and social relationships of international students while studying in Australia. For social interactions, Facebook offers a convenient and time efficient mode by which to interact with other Facebook users that they know. However, Facebook is only one of a suite of technology based modes that are used for overcoming barriers to face-to-face interactions. For social relationships, Facebook allows international students to be informed regarding the activities and status of others and thus allows relationships to be maintained even though geographic barriers prevent frequent face-to-face interaction. The importance of Facebook to the maintenance of social relationship is dependent on the strength of the existing relationship.

Chapter Seven

# Summary and Future Work

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## **7 Chapter Seven - Summary and Future Work**

### **7.1 Introduction**

This chapter will provide a synthesis of the overall results from the research and put the findings into the context of the contributions that have been made. It covers the potential limitations of the research along with identifying the future opportunities for further research.

This section is divided into the following:

- Section 7.2 provides a brief overview of the key findings that have been obtained from this research;
- Section 7.3 discusses the theoretical, methodological and substantive contributions that this research has made;
- Section 7.4 places the findings into the educational context. This assists in determining how the results that were obtained may be applicable to the educational environment;
- Section 7.5 covers the limitations of the study. All research that is undertaken has limitations and restrictions placed upon it and/or the findings that are obtained. This section will add additional context to the research findings;
- Section 7.6 discusses possible future research that could be undertaken to expand on the current findings; and
- Section 7.7 provides final reflections in regard to the conclusions that have been stated.

### **7.2 Summary of Findings**

This section presents a brief summary of the major findings from this research undertaking.

The key findings from this research have identified insights and understanding relating to both the role of Facebook in the social relationships and social interactions of international students studying in Australia.

The interactions between international students are influenced by three inter-related factors: the convenience of the interaction; the environmental influences; and the

relationship strength. Convenience refers to the modes that are available to the interaction and the time and effort required to undertake them. Environmental influences are the factors at play in the environment such as geographic location and the modes that are commonly used by other students. Relationship status refers to the strength of the relationship which influences the time and effort that students are willing to exert.

International students use a range of technologies in order to interact with each other. The choice of which technologies form part of this technological interaction suite depends on who they have social relationships with and the technologies that are common between them. In selecting which particular mode should be used in each specific interaction is based on the strength of the relationship, in that the stronger the relationship, the more intimate the desired interaction. This indicates that no one technological interaction mode meets all the needs of international students.

Facebook was found to be one of the principal technological modes of interaction for international students in Australia. The advantages are that it is a convenient mode by which to interact and stay informed, it is widely used by students in Australia and its use is time and effort-efficient. The choice to use Facebook for interaction is also influenced by the strength of the social relationship. As Facebook is convenient for broader interactions it is often used between those with moderate to weak relationships. This demonstrates that Facebook is important to social interactions between international students as it is a convenient and general interaction mode.

Overall, this research has shown that Facebook plays a role in both the social relationships and social interactions of international students who study in Australia. However the extent of this role is influenced by the strength of the social relationship. Facebook is most important in the maintenance of moderate strength relationships once geographic factors become a greater barrier to face-to-face interaction. International students who have strong relationships will tend to use other modes to interact that require a greater investment of time and effort yet allow a much more intimate interaction experience.

The broad usage of Facebook by international students does offer the potential for it to be used as part of a Universities mode of interacting and supporting mechanisms. However, the optional nature and small percentage of international students who do not use Facebook presents potential issues around its effectiveness. This is consideration that needs further investigation.

The formation of social relationships between international students is strongly influenced by the opportunities that are offered by the common environment. To facilitate the formation of social relationships the environment needs to give students

opportunities to interact. International students would benefit from social interaction opportunities being integrated into teaching methods. Lectures, and to some extent other methods such as tutorials and practicals, often lack a social element where students can interact freely with each other and thus the time students have together is isolating them from others instead of maximising the social opportunities that a common location and time offer in the formation of social relationships.

The social relationships that are formed by international students vary in strength from weak to moderate to strong. The strength of the social relationship influences which technology based modes of interaction to be used in the maintenance of those relationships. While geographically co-located, face-to-face interaction is most important for maintaining the social relationships while studying however once barriers to geographic interaction are in place then technology based modes will be used.

The role of Facebook in the formation of the social relationships is minimal as it is the face-to-face interactions that have the most influence. However Facebook plays an important role in the maintenance of moderate social relationships once there are barriers to face-to-face interaction. Facebook is less important in maintaining weak relationships while strong relationships are maintained via more personalised modes of interaction such as Skype and MS Messenger.

### **7.3 Contributions of the Research**

This section discusses the theoretical, methodological and substantive contributions that this research has made to the area of Information Systems.

At the substantive level this research provided a detailed case study on the role of Facebook amongst and within a small self-contained class of international students. It highlights that the social connections of international students are complex in nature and do not necessarily fit within the assumptions that are made regarding Facebook, its use and significance. Importantly, it reveals that the choice of Facebook as a mode by which social relationships are maintained and social interactions are undertaken is based on its usefulness and efficiency. Facebook is most important in the maintenance of moderate strength social relationships once study has ended and there are greater barriers to social interaction. It was also found that Facebook does not appear to meet all of the interaction needs of international students and that the more intimate modes made available by Facebook are possibly being concealed by its social nature. This case study suggests that educational institutions seeking to use Facebook to support and enhance student experience should be cautious as it may not provide the benefits assumed particularly for international students.

At the methodological level, this research combined multiple data collection and data analysis techniques together as an innovative approach to overcoming the methodological limitations of previous research on Facebook. The use of this mode allows greater insight into the influence of specific social relationships and the role of Facebook in the interactive behaviours of international students while geographically co-located and after, once a common environment and motivations were no longer. This approach overcomes the weaknesses in past approaches that have been limited in their breadth over time and inherent weaknesses in methodologies used.

At the theoretical level, this research has produced models that illustrate the associations that exist between social connections, social relationships, social interactions and the use of Facebook. These models illustrate how the changing nature of social relationships, in terms of strength, interacts with convenience, location, time and the need to interact with others. The complex inter-relationship between international students, the factors influencing their interactions and the choice of mode by which to interact are key concerns in research investigating this area.

In addition, the use of social network analysis was modified and a more subjective approach was applied to the creation of the social network analysis diagrams. Traditional methods that use computer modelling are effective with large data sets however the small data set used for this research allowed a more hands-on approach to be more effective.

## **7.4 Limitations of the Study**

The researcher recognizes that this research has certain limitations. These limitations should be considered when examining the results so that they can be put into context of the situation and environment in which the study was undertaken. General limitations of research include the limited generalisability of the results (Galliers, 1992), the required interpretation by the researcher (Galliers, 1992) and issues around possible lack of rigor and relevance of the research method (Darke, Shanks & Broadbent, 1998; Klein and Myers, 1999). Below is a discussion of the specific limitations that were present when undertaking the research.

### **7.4.1 Ethical Restrictions**

The first of the limitations relates to the ethical restrictions that were placed upon this research undertaking. All research that is undertaken at the University of Tasmania requires official ethical approval. This is important to ensure the privacy and safety of those research participants who are involved. However, the ethical protections that



are put in place to protect the research participants can often lead to restrictions for the research and the data collection process. Additional detail regarding some of the general ethical issues related to research in the online space can be found in Section 3.2.

During 2010 while the participants were undertaking the FSP course, the researcher was working as a teacher within the program and so the ethics committee set some restrictions on the data that could be collected and used. These restrictions limited the scope and types of data that were able to be used in addressing the research questions. Ethical considerations are an important aspect to undertaking safe research however in the online space there are still aspects that need to be better understood especially around the nature of the activities and data shared in the semi-public spaces. While ethical permission was granted for the collection and use of survey data and semi-structured interviews, the use of observational data was forbidden. This restriction in using observational data created some limitations that were overcome via the use of multiple data collection and analysis methods.

#### **7.4.2 Characteristics of the Foundation Studies Program**

A further limitation of the research relates to the environment in which the research was undertaken. While the FSP course offered a suitable location and a group boundary, the course still has certain characteristics that differ from the majority of university courses. Subjects at the University of Tasmania are often taught using a combination of large group lectures and smaller tutorial/practical classes. Therefore the size of classes and the cultural composition is often different, especially in relation to the presence of Australian students. The presence of Australian students, who would often be more comfortable and accustomed to the local environment, may have had a differing influence on the social relationships and interactions of the participant student group.

The FSP course is relatively isolated from the rest of the University both in course structure and geographical location. FSP students are not required to interact with the wider University of Tasmania student community as all units are unique to the FSP course and a majority of classes being undertaken in a geographic location approximately 500 metres from the main campus, as discussed in Section 3.5.3.1. A more central location and interactions with the broader university student community may also have influenced what social relationships were formed and how they used Facebook.

### **7.4.3 Participant Access After Program Conclusion**

Also acting as a limitation on the study was access to the research participants at the conclusion of the FSP course. As stated in the methodology in Chapter Three, surveys were conducted at three time points. The final survey, which was undertaken after the conclusion of the program, was problematic in that the response rate was much lower than was desired. During the program, the researcher had access to all of the participants but once the program concluded then the participants dispersed. Some participants returned to the University of Tasmania's Hobart campus to begin their study however many others did not and thus making contacting the participants difficult. Consequently the models indicating the social relationships between the participants once the FSP course had concluded were not able to be as conclusive as the research had hoped.

### **7.4.4 English Language Ability of Participants**

The research participants were all international students that had come to the University of Tasmania to undertake a study program to help them prepare for university level study. This meant that not only were the participants from diverse cultural backgrounds, they also had varying degrees of English language ability. While the FSP course has English language study as a core unit and all participants must meet an English language minimum to study, this does not mean that everyone's level of English is equal. This difference in language ability may have led to issues of understanding in regard to both the survey instrument used and the semi-structured interviews.

While the semi-structured interviews that were undertaken took into account the possibilities for English language comprehension issues and addressed them by allowing clarifications and to be made, this was not the case with the survey instrument. While the survey was written with English ability in mind, issues with understanding may still have occurred.

### **7.4.5 Researcher Bias**

In any research that is undertaken, the role that the researcher plays in the research and their influence must be identified and taken into account. This is especially true for subjective research that identifies and acknowledges the role that the researcher plays. The researcher does have some influence on the research that cannot be avoided but as long as it is taken into account, does not negatively affect the outcome.

In this case, the researcher most certainly has an influencing role in the research. As a teacher of the participants, there are going to be factors that need to be identified. These factors include:

- The relationship that the teacher has with the participants;
- The power that the teacher has over the participants in terms of being in a position of authority;
- The influence the teacher has over the results the participants obtain in the class; and
- The control that the teacher has in what material is taught in the classroom that could influence understanding.

These issues and the power relationship have been identified as a contributing factor toward not being able to gain permission to use observational data. The influence of the researcher on the research participants was minimised in the following ways: Observational data was not used. The approach to requesting participation allowed participants to decline; None of the data collection or analysis had any impact or association with students' study or assessment outcomes. In addition, all analysis was undertaken using a range of methodological techniques that were followed to ensure bias was not influencing the results.

## **7.5 Future Research**

This research examined the role of Facebook by a group of international students over the course of approximately a 15 month time period. Given that Facebook is designed to formalise social relationships and allow interactions between individuals over the long term, a research study examining a similar group of international students over a much longer period of time would give the opportunity to see how the social relationships and social interactions change over time and the influence of Facebook on those social connections. This would give greater context to the use of Facebook and the importance over a much greater period of time.

In undertaking this research project, substantial ethical concerns were raised. These issues centred around the nature of data collection in the online space, specifically in the use of digital social networks such as Facebook. These online systems allow more to be shared in much easier fashion however, the nature of this sharing and what is shared still seems to be posing questions for researchers and the ethical protections that should be followed. While the online space allows more data to be collected in a much easier way, questions arise as to the ethical nature of such an approach. Is it ethical to collect data from public network sites without the authors explicit authority? Where is the line between public and private in systems such as Facebook?

What level of privacy do students expect when there is a high level of peer pressure to use such sites? These are all aspects that can be investigated further in future research.

In relation to the uses of Facebook in educational environments, there is opportunity for future work to examine the use of Facebook for specific assessment purposes. This study indicated that Facebook was used as a support tool in preparing and undertaking assessment, therefore there is a possible opportunity to see if Facebook could be specifically used for assessment purposes in the same way other 3<sup>rd</sup> party software is used.

An educational environment was used for this research however the results indicate that it was the social aspect of the environment and not the educational aspect that played an important role in the use of Facebook. Future research could pursue a similar study researching differing social environments in order to determine in greater detail what elements of the social environments are at play. This could allow a greater understanding of the geographic environments and how they relate to Facebook usage.

In recognition of the environmental factors that are at play in the use of Facebook, a further examination of the role of geographic distance could be further investigated. There are indications from the research that Facebook use is dependent on being geographically co-located with other users as it is this co-location that encourages usage. By specifically examining geographic factors, their importance to Facebook usage can be better understood.

## **7.6 Concluding Reflections**

This final chapter of the thesis provided some concluding comments in regard to the research that was undertaken. It provided an overview of the key findings from this research and specifically identified the theoretical, methodological and substantive contributions that have been made to the greater body of knowledge of the area. It also identified the limitations that are present in the research that was undertaken presented some possible directions that future research could undertake in order to build upon and expand upon what has been investigated and determined from this research.

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# Appendix

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## **Appendix**

### **Appendix 1– Survey Questionnaires**

## Appendix 1a - Survey 1

### Foundation Studies Program - Computing Skills and Research Management

March – November 2010

#### Details

1. Your name (include the name you wish to be called / underline your family name):
2. Your date of birth (DD/MM/YY)
3. University Student ID Number?
4. Country where you were born?
5. What is your first language / what language do you speak the most?
6. What other languages can you speak?
7. How long have you been living in Australia/Tasmania?
8. Please list the countries where you have lived/studied in before coming to Australia
9. University email address/username  
  
\_\_\_\_\_ [@postoffice.utas.edu.au](mailto:_____@postoffice.utas.edu.au)
10. Your personal email address
11. What would you like to study after you finish completing the Foundation course?

**Computing Resources**

12. Do you have your own computer?

Yes

No

13. Do you have access to a computer where you live?

Yes

No

14. Do you have internet access where you live?

Yes

No (but I will get internet)

No

15. If you own a computer, is it a PC running Windows XP, Vista, Win 7 or Mac OS?

Windows XP

Windows Vista

Windows 7

Mac OS

Other

( )

16. Do you have a copy of Microsoft Office?

MS Office 2003

MS Office 2007

I don't have a copy

Other

( )

17. Do you use any online social network sites? (e.g. Facebook, MySpace, Twitter, Mixi etc)

Yes

No

If Yes, Please list	Less than 1 time per week	1-4 times per week	Everyday
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. What computer programs do you use to communicate with your family and friends?

MS Messenger	<input type="checkbox"/>	(Other – please list)	
Skype	<input type="checkbox"/>	_____	<input type="checkbox"/>
AOL	<input type="checkbox"/>	_____	<input type="checkbox"/>

### **Computing Experience**

19. How would you rate your computing experience/knowledge?

None - Minor - Average - Good - Excellent - Exp

20. How often do you use a computer?

Never - Once a week - 2-5 times per week - Once a day - Several times a day

21. Which of the following have you used a computer for?

	Rarely	Sometimes	Often
- Email:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Internet/World Wide Web:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Gaming:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Social Networks (e.g. Facebook, MySpace)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Writing School/Uni Assignments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Internet Banking:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Buying/Selling Online (e.g. eBay, Amazon):	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Internet Chat (e.g. MS Messenger, Skype)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Programming (C++, Java, XML)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Database Creation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Web Page Creation & Design	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
- Other (please list):			
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
_____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

22. I know how to use a search engine (such as Google, Yahoo).

(None)      1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10      (Expert)

23. I know how to use email.

(None)      1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10      (Expert)

24. I am familiar with the Microsoft Windows operating system (such as Windows XP, Windows 2000, Vista, Windows 7).

(None)      1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10      (Expert)

25. I know how to use Microsoft Word

(None)      1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10      (Expert)

26. I know how to use Microsoft Excel

(None)      1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10      (Expert)

27. I know how to use Microsoft PowerPoint

(None)      1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10      (Expert)

### **Computer Training**

Have you completed any other computer training courses (Not in High School)?  
(If so please list with a brief description)

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**Comments** (Please write any further comments you wish to make)

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## Appendix 1b - Survey 2

### Communicative Practise Survey

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#### Begin Survey

Title of Project: An Exploratory Study of the Use of Digital Social Networks by International University Students."

1. I have read and understood the 'Information Sheet' for this project.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study involves the completion of a survey that will take approximately 30 minutes to complete and will be done during class time.
4. I understand that participation involves the risk(s) that my knowledge and use of computers & digital social networks could be identified by others. However all the surveys will be kept in a locked office and any information obtained from them will have identifying information removed so that you can NOT be identified from the information given.
5. I understand that all research data will be securely stored on the University of Tasmania premises for at least five years, and will then be destroyed when no longer required].
6. Any questions that I have asked have been answered to my satisfaction.
7. I agree that research data gathered from me for the study may be published provided that I cannot be identified as a participant.
8. I understand that the researchers will maintain my identity confidential and that any information I supply to the researcher(s) will be used only for the purposes of the research.
9. I agree to participate in this investigation and understand that I may withdraw at any time without any effect, and if I so wish, may request that any data I have supplied to date be withdrawn from the research.

By entering your Participant ID and clicking to continue, you are consenting to participating in this research project.

**1.) Please enter your ID code (given to you by Aaron)**

---

## Background Information

### 2.) Please indicate which subjects you are studying in the Foundation Studies Program

You may use a copy of the timetable to identify which class you are studying.

	Studying	Not-Studying
Academic English (Class 1)	<input type="checkbox"/>	<input type="checkbox"/>
Academic English (Class 2)	<input type="checkbox"/>	<input type="checkbox"/>
Academic English (Class 3)	<input type="checkbox"/>	<input type="checkbox"/>
Academic English (Class 4)	<input type="checkbox"/>	<input type="checkbox"/>
Australian Studies (Class 1)	<input type="checkbox"/>	<input type="checkbox"/>
Australian Studies (Class 2)	<input type="checkbox"/>	<input type="checkbox"/>
Australian Studies (Class 3)	<input type="checkbox"/>	<input type="checkbox"/>
Australian Studies (Class 4)	<input type="checkbox"/>	<input type="checkbox"/>
Computing (Tuesday)	<input type="checkbox"/>	<input type="checkbox"/>
Computing (Thursday)	<input type="checkbox"/>	<input type="checkbox"/>
Computing (Friday)	<input type="checkbox"/>	<input type="checkbox"/>
Legal Studies	<input type="checkbox"/>	<input type="checkbox"/>
Mathematics (Class 1)	<input type="checkbox"/>	<input type="checkbox"/>
Mathematics (Class 2)	<input type="checkbox"/>	<input type="checkbox"/>



Mathematics (Class 3)	<input type="checkbox"/>	<input type="checkbox"/>
Management (Class 1)	<input type="checkbox"/>	<input type="checkbox"/>
Management (Class 2)	<input type="checkbox"/>	<input type="checkbox"/>
Physics	<input type="checkbox"/>	<input type="checkbox"/>
Psychology	<input type="checkbox"/>	<input type="checkbox"/>
Chemistry	<input type="checkbox"/>	<input type="checkbox"/>
Marketing	<input type="checkbox"/>	<input type="checkbox"/>
Biology	<input type="checkbox"/>	<input type="checkbox"/>

**3.) Since studying in the Foundation Studies Program, how much has your english improved?**

- ☐ (No Improvement) 1  
☐ 2  
☐ 3  
☐ 4  
☐ (High Improvement) 5

**4.) How would you rate your computer skill now?**

- ☐ (Poor) 1  
☐ 2  
☐ 3  
☐ 4  
☐ (High) 5

**5.) What is your native language?**

\_\_\_\_\_

**6.) What other languages do you speak often?**

Language 1: \_\_\_\_\_

Language 2: \_\_\_\_\_

Language 3: \_\_\_\_\_

**7.) How much time do you communicate using english?**

- ☐ Less than 10%  
☐ 10%-25%  
☐ 25%-40%  
☐ 40%-55%  
☐ 55%-70%  
☐ 70%-85%  
☐ More than 85%

**8.) Indicate where you MOSTLY communicate using english or another language.**

	English	Other Language	Not Applicable
At University (in class)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At University (outside of class)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At home/place of residence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At place of work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
With classmates	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
With friends (not Foundation Students)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
With Family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**9.) What languages are spoken WHERE YOU LIVE now in Hobart?**

Language 1: \_\_\_\_\_  
 Language 2: \_\_\_\_\_  
 Language 3: \_\_\_\_\_  
 Language 4: \_\_\_\_\_  
 Language 5: \_\_\_\_\_

#### 10.) Select the types of transportation you use

	to/from University	to/from work place	to/from supermarket	to/from other activities (e.g. Weekend travel, parties etc)
Car (you own)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Car (borrow)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Motorbike	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bicycle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Bus	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### Foundation Studies Program

#### 11.) Please list the first names of any Foundation student that you knew BEFORE starting the Foundation Studies Program

	First Name	First Name
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____

#### 12.) Do you live with any other Foundation students?

- ☐ Yes - share house  
☐ Yes - dormitory or college accommodation  
☐ No

**) Please list the first name of those Foundation students that you live with.**

	First Name	First Name
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____

**13.) Please list the names of 1 - 10 other Foundation students that you communicate with on a regular basis.**

	First Name
-	_____
-	_____
-	_____
-	_____
-	_____
-	_____
-	_____
-	_____
-	_____
-	_____

**14.) Which Foundation students do you communicate MOST OFTEN OUTSIDE of class time?**

	First Name	First Name
-	_____	_____
-	_____	_____
-	_____	_____

15.) Please indicate how you prefer to communicate with the following:

	Face to Face	Email	Phone (Land-line)	Mobile Phone Call	SMS	Chat Program	Social Network Program (Facebook, MySpace etc)
Foundation Teachers	( )	( )	( )	( )	( )	( )	( )
Other Foundation Students	( )	( )	( )	( )	( )	( )	( )
University Staff	( )	( )	( )	( )	( )	( )	( )
Friends (Non-Foundation)	( )	( )	( )	( )	( )	( )	( )
Family	( )	( )	( )	( )	( )	( )	( )

16.) During class days (Monday-Friday), how often do you eat lunch with other Foundation students?

- ( ) Never  
 ( ) 1 time per week  
 ( ) 1-2 times each week  
 ( ) 3-4 times each week  
 ( ) Everyday

) Who do you regularly eat lunch with (Foundation Students Only)

	First Name	First Name
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____

**17.) Which of the following have you done together with other Foundation students?**

- ☐ Traveled to/from University to where you live
- ☐ Visited someone where they live
- ☐ Had someone visit you where you live
- ☐ Went shopping (supermarket, city, shopping centre etc)
- ☐ Short time activity (went to restaurant for dinner, went to the cinema etc)
- ☐ Long time activity (overnight trip, road trip, holiday etc)

**18.) Please list any social network and online chat programs that you use (e.g Facebook, MSN, Skype, MySpace etc)**

	Program Name	Program Name
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____

---

## Facebook Usage

**19.) Did you use Facebook BEFORE being introduced to it in Computing Class?**

- ☐ Yes
- ☐ No

**) How did you first learn about Facebook?**

---

**) Approximately, how long have you been using Facebook?(Years/Months)**

	Years	Months
-		

**) If you used Facebook before studying Foundation, why did you decide to join?**

- ☐ Other friends wanted me to join
- ☐ I knew friends who were using Facebook
- ☐ To meet new people
- ☐ To find people i know
- ☐ To play games

**) Please list other reasons you joined Facebook**

Reason: \_\_\_\_\_

Reason: \_\_\_\_\_

Reason: \_\_\_\_\_

**20.) How often do you use Facebook?**

- ☐ I don't use Facebook
- ☐ Less than 1 time per month
- ☐ About 2-3 times per month
- ☐ About 1 time per week
- ☐ About 2-5 times a week
- ☐ About 1 time each day
- ☐ More than 1 time per day

**) If you DO NOT or Rarely use Facebook, why?**

- ☐ Lack of Computer Skill
- ☐ Not Enough Time



- ☐ My Friends do not use Facebook  
☐ Privacy Worries  
☐ I Prefer a Different Social Program  
☐ No Specific Reason

**) Are there any other reasons that you DO NOT use Facebook?**

Reason: \_\_\_\_\_

Reason: \_\_\_\_\_

Reason: \_\_\_\_\_

**21.) When was the last time you used Facebook?**

- ☐ Less than 4 hours ago  
☐ Today  
☐ This week  
☐ This month  
☐ More than one month  
☐ I don't use/I don't remember

---

## Facebook Usage (cont)

**22.) How would you rate your Facebook skill?**

- ☐ (Poor) 1  
☐ 2  
☐ 3  
☐ 4  
☐ 5 (Excellent)

**23.) What activities do you do on Facebook?**

	(Never)	2	3	4	(Always)
--	---------	---	---	---	----------



	1				5
Write a comment (Public)	( )	( )	( )	( )	( )
Send a private message to a Facebook friend	( )	( )	( )	( )	( )
'Like' a comment, photo etc	( )	( )	( )	( )	( )
Upload photos	( )	( )	( )	( )	( )
Upload a video	( )	( )	( )	( )	( )
Played a Facebook game	( )	( )	( )	( )	( )
Joined a Facebook group	( )	( )	( )	( )	( )
Organised an event	( )	( )	( )	( )	( )
Shared a website link	( )	( )	( )	( )	( )

**24.) What other activities do you do on Facebook?**

	Activity
-	_____
-	_____
-	_____
-	_____
-	_____
-	_____

**25.) How many Facebook friends do you have? (Number)**

\_\_\_\_\_

**26.) Do you add people you do not know/have not met to your Facebook Friends?**

- ☐ No  
☐ Rarely  
☐ Sometimes  
☐ Yes, Often  
☐ Yes, Always

**27.) How many of your Facebook Friends do you communicate with using Facebook? How Often?**

	Never	Rarely	Sometimes	Often	All the time
1-2 Friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3-5 Friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6-10 Friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11-20 Friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20+ Friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**28.) When posting public messages on Facebook, what type of information do you share?**

- ☐ Activities and things that I will do or have done  
☐ What you are doing now  
☐ Random ideas/thoughts  
☐ Health status  
☐ Relationship information

**29.) Please list any other information you publicly post on Facebook.**

	<b>Information Posted</b>
--	---------------------------

A.	
B.	
C.	
D.	

**30.) What personal information (information about yourself) have you put on Facebook?**

	Visible to Public	Visible to Friends Only	Visible to Friends-of-Friends	Not on Facebook	Don't Know
Gender	( )	( )	( )	( )	( )
Date of Birth	( )	( )	( )	( )	( )
Date of Birthday	( )	( )	( )	( )	( )
Siblings (family members)	( )	( )	( )	( )	( )
Interested in	( )	( )	( )	( )	( )
Current City	( )	( )	( )	( )	( )
Home City	( )	( )	( )	( )	( )
Quotation	( )	( )	( )	( )	( )
Networks	( )	( )	( )	( )	( )
Education Information	( )	( )	( )	( )	( )
Work Information	( )	( )	( )	( )	( )
Likes & Interests	( )	( )	( )	( )	( )
Phone numbers (home, mobile, work etc)	( )	( )	( )	( )	( )
Contact Information (MSN username, skype username, etc)	( )	( )	( )	( )	( )

**31.) Which of the following do you use Facebook on?**

- ☐ Your own computer where you live
- ☐ A public computer (Uni Computer, Internet Cafe, Computer lab etc)
- ☐ A mobile device (iPhone, Blackberry etc)
- ☐ A game system (Xbox360, PS3, PSP etc)
- ☐ Other

**32.) Have you ever clicked on an advertisement on the Facebook page?**

- ☐ No, Never
- ☐ Yes - rarely
- ☐ Yes - sometimes
- ☐ Yes - Often
- ☐ Yes - All the time

**33.) Please list as many advertisements that you remember seeing on Facebook. (List from your memory)**

- : \_\_\_\_\_
- : \_\_\_\_\_
- : \_\_\_\_\_
- : \_\_\_\_\_
- : \_\_\_\_\_
- : \_\_\_\_\_
- : \_\_\_\_\_
- : \_\_\_\_\_

---

**Facebook Usage and Foundation Studies Program****34.) How many Foundation (2010) students do you have as friends on Facebook?**

- ☐ None  
☐ 1-2  
☐ 3-10  
☐ 11-25  
☐ 26+

**) Do you use Facebook to communicate with other Foundation (2010) students?**

- ☐ No  
☐ Yes - Rarely  
☐ Yes - Sometimes  
☐ Yes - Often  
☐ Yes - Everyday

**) Who from the Foundation program do you communicate with on Facebook?**

	First Name	First Name
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____

**35.) Did you use Facebook to communicate with other Foundation students for:**

	Yes	No
Help with class work (Any class)	<input type="checkbox"/>	<input type="checkbox"/>
Computing Assignment 1 (Information Search)	<input type="checkbox"/>	<input type="checkbox"/>
Computing MS	<input type="checkbox"/>	<input type="checkbox"/>

Word Test		
Computing Assignment 2 (Small Group - Superhero)	( )	( )
Computing Assignment 3 (Class Group - Promotion Task)	( )	( )
Any non-class events/activities	( )	( )

**36.) During Semester 1 of Foundation, which of the following activities did you do on Facebook?**

	Yes	No
Browsed public posts / Friend profiles	( )	( )
Posted a comment	( )	( )
Sent a private message	( )	( )
Uploaded a photo	( )	( )
Uploaded a video	( )	( )
Played a Facebook game	( )	( )
Joined a Facebook group	( )	( )

**37.) Did you use Facebook during the 2 week holiday?**

- ( ) No - I didn't use Facebook  
 ( ) Yes - 1 time only  
 ( ) Yes - 1 time per week  
 ( ) Yes - 2-4 times per week

☐ ( ) Yes - Everyday

**) Which of the following did you do on Facebook during the semester holiday?**

<input type="checkbox"/>	Yes	No
Browsed public posts / Friends profiles	<input type="checkbox"/>	<input type="checkbox"/>
Posted a public comment	<input type="checkbox"/>	<input type="checkbox"/>
Sent a private message to a friend	<input type="checkbox"/>	<input type="checkbox"/>
Uploaded photos	<input type="checkbox"/>	<input type="checkbox"/>
Uploaded video	<input type="checkbox"/>	<input type="checkbox"/>
Played a Facebook game	<input type="checkbox"/>	<input type="checkbox"/>
Joined a Facebook Group	<input type="checkbox"/>	<input type="checkbox"/>

## Facebook Opinion

**38.) Do you like using Facebook?**

☐ Yes

☐ No

**39.) If your close friends didn't use Facebook, would you still use it?**

☐ Yes



☐ No

**40.) Do you think you will continue to use Facebook after you finish the Foundation Studies Program?**

☐ Yes

☐ No

**41.) Overall, what is your opinion of Facebook?**

\_\_\_\_\_

\_\_\_\_\_

### **Survey Conclusion**

**42.) Do you have any further comments that you want to make about this survey?**

\_\_\_\_\_

**43.) Did you have any problems understanding the english language in this survey?**

\_\_\_\_\_

**44.) Would you be interested in participating further in this research in the near future?**

☐ Yes

☐ No

\_\_\_\_\_

**Thank You!**

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## **Appendix 1c - Survey 3**

# Use of Facebook by International Students

## Survey 3 - From Aaron Olding

Please tick the box at the bottom of the page to continue

1.) Thank you for undertaking this survey for Aaron Olding as part of his research into the 'Use of Digital Social Networks by University Students'.

Information about this research was given out during the first survey in class in July/August 2010.

If you have any specific questions please feel free to contact Aaron Olding ([aolding@utas.edu.au](mailto:aolding@utas.edu.au)) before or after the survey.

### CONSENT FORM

Title of Project: An Exploratory Study of the Use of Digital Social Networks by International University Students."

1. I have read and understood the 'Information Sheet' for this project.
2. The nature and possible effects of the study have been explained to me.
3. I understand that the study involves voluntary participation in a 15min Online Survey.
4. I understand that the data collected from the survey will be kept in a locked office and on a password protected computer system. Any information obtained from them will have identifying information removed so that you can NOT be identified from the information given.
5. I understand that all research data will be securely stored on the University of Tasmania premises for at least five years, and will then be destroyed when no longer required.
6. Any questions that I have asked have been answered to my satisfaction.

**7. I agree that research data gathered from me for the study may be published provided that I cannot be identified as a participant.**

**8. I understand that the researchers will maintain my identity confidentially and that any information I supply to the researcher(s) will be used only for the purposes of the research.**

**9. I agree to participate in this investigation and understand that I may withdraw at any time without any effect, and if I so wish, may request that any data I have supplied to date be withdrawn from the research.**

[ ] I understand and consent to participate in this survey (Please tick this box to continue)

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## **General Information**

**2.) Please enter the following information**

First name:: \_\_\_\_\_

Family name (first letter only):: \_\_\_\_\_

**3.) During the holiday (December 1 2010 - Feb 1 2011), where did you spend the most time?**

Please tick

- ( ) In Hobart
- ( ) In another part of Tasmania (Please list below)
- ( ) In Australia (not Tasmania) (Please list below)
- ( ) Country where your family lives (Please list below)
- ( ) Other country (Please list below)

**) Please list**

\_\_\_\_\_

**4.) During the holiday (Dec 1 2010 - Feb 1 2011), which of these activities did you do?**

Select all that are relevant

- ☐ Had a holiday with friends
- ☐ Had a holiday with family
- ☐ Had part-time work
- ☐ Had full-time work
- ☐ More study (at school or University)
- ☐ Study (personal)
- ☐ Other (Please list)

**) Please list activities**

- : \_\_\_\_\_
- : \_\_\_\_\_
- : \_\_\_\_\_
- : \_\_\_\_\_

**5.) During the holiday (Dec 1 2010 - Feb 1 2011), what language(s) did you use most often?**

Please list all languages used

- ☐ English
- ☐ Arabic
- ☐ Chinese (Cantonese)
- ☐ Chinese (Mandarin)
- ☐ Malay
- ☐ Korean
- ☐ Japanese
- ☐ Vietnamese
- ☐ Other (Please list)

) Please list other languages spoken

-: \_\_\_\_\_

-: \_\_\_\_\_

**6.) During the holiday (Dec 1 2010 - Feb 1 2011), what % of the time did you speak English ?**

- ☐ 0%
- ☐ 10%
- ☐ 25%
- ☐ 50%
- ☐ 75%
- ☐ 90%
- ☐ 100%

**7.) Where will you be living in 2011?**

- ☐ Hobart
- ☐ Launceston
- ☐ Mainland Australia (Please List city)
- ☐ Overseas City/Country (Please List city)

**) Please list city**

\_\_\_\_\_

**8.) Which of the following will be your main activity in 2011?**

- ☐ Study at University of Tasmania (Hobart)
- ☐ Study at University of Tasmania (Launceston)
- ☐ Study at University in mainland Australia (Please list where)
- ☐ Study not in Australia (Please list where)
- ☐ Working Part-time / Full-time
- ☐ I don't know yet

) Please list where

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) Who, from Foundation 2010, have you met/talked with/communicated with since starting your study?

-: \_\_\_\_\_  
 -: \_\_\_\_\_  
 -: \_\_\_\_\_  
 -: \_\_\_\_\_  
 -: \_\_\_\_\_  
 -: \_\_\_\_\_  
 -: \_\_\_\_\_  
 -: \_\_\_\_\_  
 -: \_\_\_\_\_  
 -: \_\_\_\_\_  
 -: \_\_\_\_\_

## Classmate Interactions

**Note:** Please note that these questions relate to 'during the holiday' and 'after the holiday'. Each question is marked to indicate this.

9.) During the holiday (Dec 1 2010 - Feb 1 2011), did you communicate with any Foundation 2010 students ?

( ) Yes (Please list below)

( ) No

) During the holiday (Dec 1 2010 - Feb 1 2011), who and how did you communicate with others student from the Foundation 2010 class?

	Name	Main method of Communication
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-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____

**) During the holiday (Dec 1 2010 - Feb 1 2011), when you communicated with other students from Foundation 2010, what methods did you use?**

	Didn't use	1-2 times per month	1-2 times per week	3-6 times per week	Everyday
Face-to-Face	( )	( )	( )	( )	( )
Telephone (home)	( )	( )	( )	( )	( )
Mobile phone	( )	( )	( )	( )	( )
Online social network (such as Facebook)	( )	( )	( )	( )	( )
Online chat program (such as Skype, MSN etc)	( )	( )	( )	( )	( )
Email	( )	( )	( )	( )	( )

**10.) AFTER the holiday (Dec 1 2010 - Feb 1 2011), did you communicate with any Foundation 2010 students ?**

☐ Yes (Please list below)

☐ No

**) AFTER the holiday (Dec 1 2010 - Feb 1 2011), who and how did you communicate with others student from the Foundation 2010 class?**

	Name	Main method of Communication
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
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-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____
-	_____	_____

**) AFTER the holiday (Dec 1 2010 - Feb 1 2011), when you communicated with other students from Foundation 2010, what methods did you use?**

	Didn't use	1-2 times per month	1-2 times per week	3-6 times per week	Everyday
Face-to-Face	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Telephone (home)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Mobile phone	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Online social network (such as Facebook)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Online	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



chat program (such as Skype, MSN etc)					
Email	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Digital Social Networks

11.) How would you rate your Facebook skill?

- ☐ (Poor) 1  
☐ 2  
☐ 3  
☐ 4  
☐ 5 (High Skill)

12.) Between Dec 1 2010 - Now, have you used Facebook since finishing the Foundation Studies Program 2010

- ☐ Yes  
☐ No

) Why didn't you use Facebook?

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) When was the last time you accessed Facebook?

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) During the holiday (Dec 1 2010 - Feb 1 2011) did you use Facebook?

- ☐ 1-2 times only

- ☐ 1 time per month  
☐ 1 time per week  
☐ 3-5 times per week  
☐ Everyday

**) AFTER the holiday (Feb 2 2011 - Now), did you used Facebook ?**

- ☐ 1-2 times only  
☐ 1-2 times only  
☐ Once a week  
☐ Once every 2-3 days  
☐ Everyday

**13.) During the holiday (Dec 1 2010 - Feb 1 2011), did you use Facebook to do any of the list activities ?**

- ☐ Contact/Communicate with students/friends from Foundation 2010  
☐ Contact/Communicate with friends NOT from Foundation 2010  
☐ Contact/Communicate with family  
☐ View your Facebook 'friends' updates?

**14.) Both during and after the holiday  
, what activities did you do on Facebook?**

	During holiday (Dec 1 2010 - Feb 1 2011)	After holiday (Feb 2 2011 - Now)
Posted a status update	<input type="checkbox"/>	<input type="checkbox"/>
View 'friends' updates and posts	<input type="checkbox"/>	<input type="checkbox"/>
Sent private message	<input type="checkbox"/>	<input type="checkbox"/>
Uploaded a photo(s)	<input type="checkbox"/>	<input type="checkbox"/>

Uploaded a video	<input type="checkbox"/>	<input type="checkbox"/>
Shared a website/video link	<input type="checkbox"/>	<input type="checkbox"/>
Other (please list below)	<input type="checkbox"/>	<input type="checkbox"/>

**15.) Please list (if needed)**

	<b>Activity (during holiday)</b>	<b>Activity (after holiday)</b>
-	_____	_____
-	_____	_____
-	_____	_____

**16.) During the holiday (Dec 1 2010 - Feb 1 2011), did you add any students from Foundation 2010 to your Facebook 'Friends list'?**

- ( ) No  
 ( ) Yes - 1-3 'friends'  
 ( ) Yes - 4-9 'friends'  
 ( ) Yes - More than 10 'friends'

**17.) AFTER the holiday (Dec 1 2010 - Feb 1 2011), did you add any students from Foundation 2010 to your Facebook 'Friends list'?**

- ( ) No  
 ( ) Yes - 1-3 'friends'  
 ( ) Yes - 4-9 'friends'  
 ( ) Yes - More than 10 'friends'

**18.) During the holiday (Dec 1 2010 - Feb 1 2011), how did you access Facebook?**

- ☐ My personal computer  
☐ Family computer

- ☐ Friend's computer
- ☐ University computer
- ☐ Internet cafe/Public computer
- ☐ Mobile phone
- ☐ Other (Please list)

**) Please List**

-: \_\_\_\_\_  
-: \_\_\_\_\_

**19.) AFTER the holiday (Feb 2 2011 - Now), how did you access Facebook?**

- ☐ My personal computer
- ☐ Family computer
- ☐ Friend's computer
- ☐ University computer
- ☐ Internet cafe/Public computer
- ☐ Mobile phone
- ☐ Other (Please list)

**) Please List**

-: \_\_\_\_\_  
-: \_\_\_\_\_

**20.) During the holiday (Dec 1 2010 - Feb 1 2011), did you use Facebook 'More' or 'Less' compared to your time studying in the Foundation 2010 course?**

- ☐ I didn't use Facebook
- ☐ A lot less
- ☐ A little less
- ☐ About the same

☐ A little more

☐ Much more

**21.) AFTER the holiday (Feb 2 2011 - Now), did you use Facebook 'More' or 'Less' compared to your time studying in the Foundation 2010 course?**

☐ I didn't use Facebook

☐ A lot less

☐ A little less

☐ About the same

☐ A little more

☐ Much more

**22.) During the holiday (Dec 1 2010 - Feb 1 2011), did you use any of the following ?**

☐ Email

☐ Chat program (e.g. Skype, MSN etc)

☐ Telephone/Mobile Phone

☐ Mail (sent/received letter)

☐ Other digital social network (such as Renren, MySpace etc)

**) Please list other online social networks used**

-: \_\_\_\_\_

-: \_\_\_\_\_

-: \_\_\_\_\_

-: \_\_\_\_\_

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**Conclusion**

**23.) Do you have any comments about this survey you would like to make?**

**24.) Would you be willing to participate in an interview with Aaron (approximately 45min - 1 hour) based on the topics presented in this survey?**

Please Note: Only some participants will be selected for interview, you will be contacted approximately 2-3 weeks after the conclusion of this survey.

- ( ) Yes, I would be willing to participate in a short 45min - 1 hour interview  
 ( ) No, I would prefer not to participate further in this research

**) Thank you for your further participation, please enter contact details below**

	-
Name (First Name)	—
Contact Email Address	—
Contact Phone No. (optional)	—

**Thank You!**

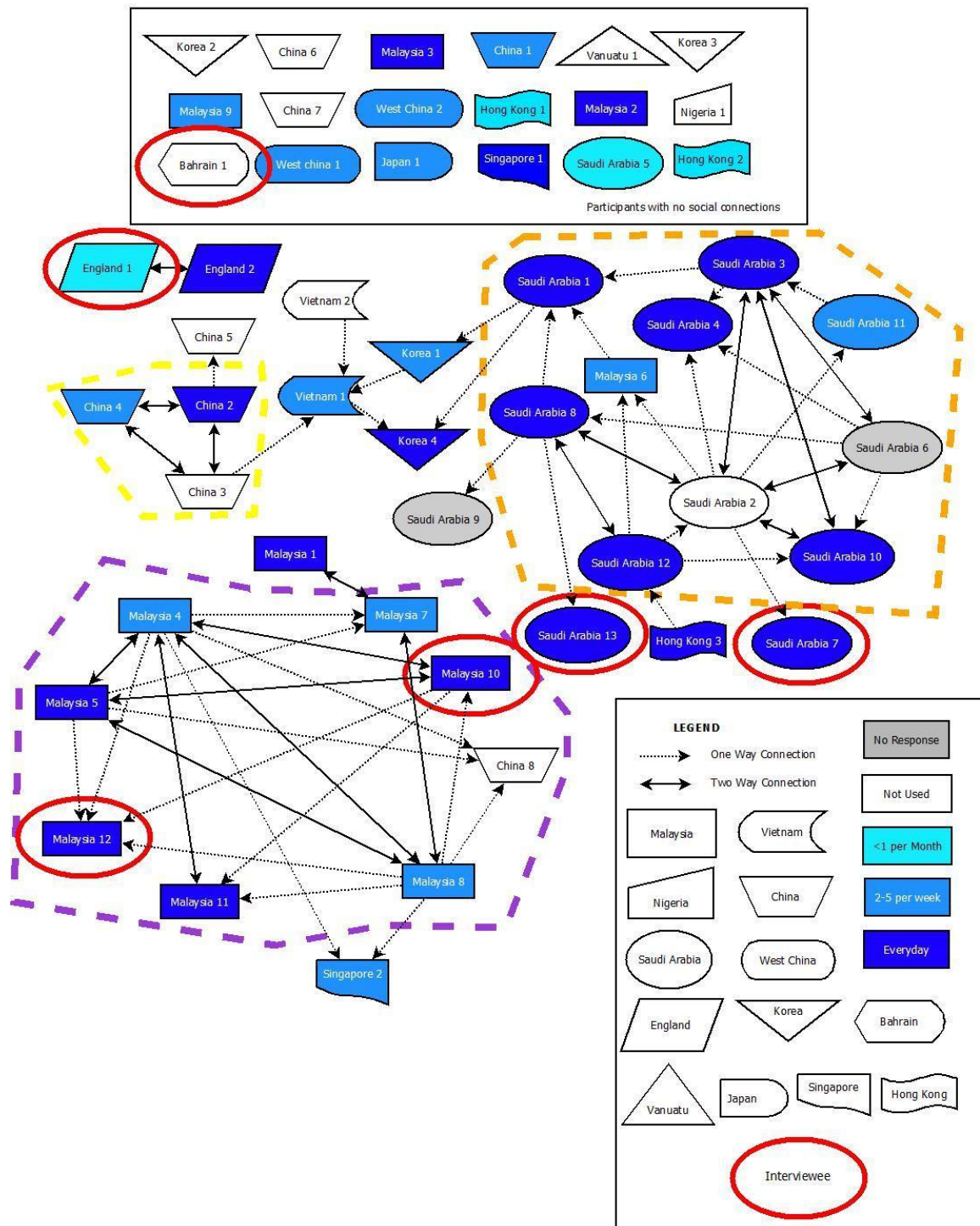
**Thank you so much for your participation in this research, it is much appreciated and if you have any additional questions or comments that you wish to make, I can be contacted at [aaron.olding@utas.edu.au](mailto:aaron.olding@utas.edu.au).**



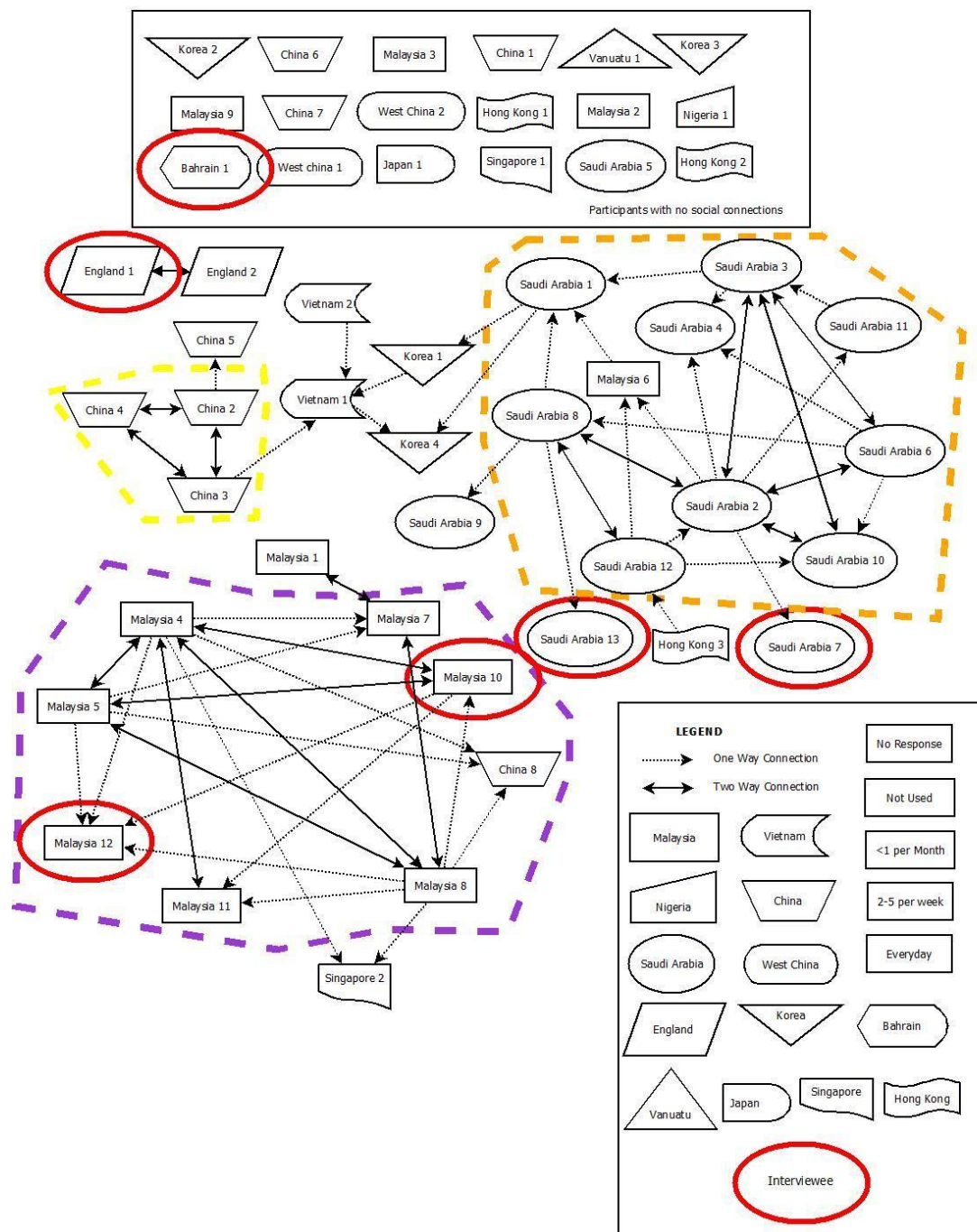
## Appendix 2- Social Network Analysis Diagrams

### Appendix 2a – Social Connections ‘Before’ Studying Together

BEFORE FSP 2010 - All Communication

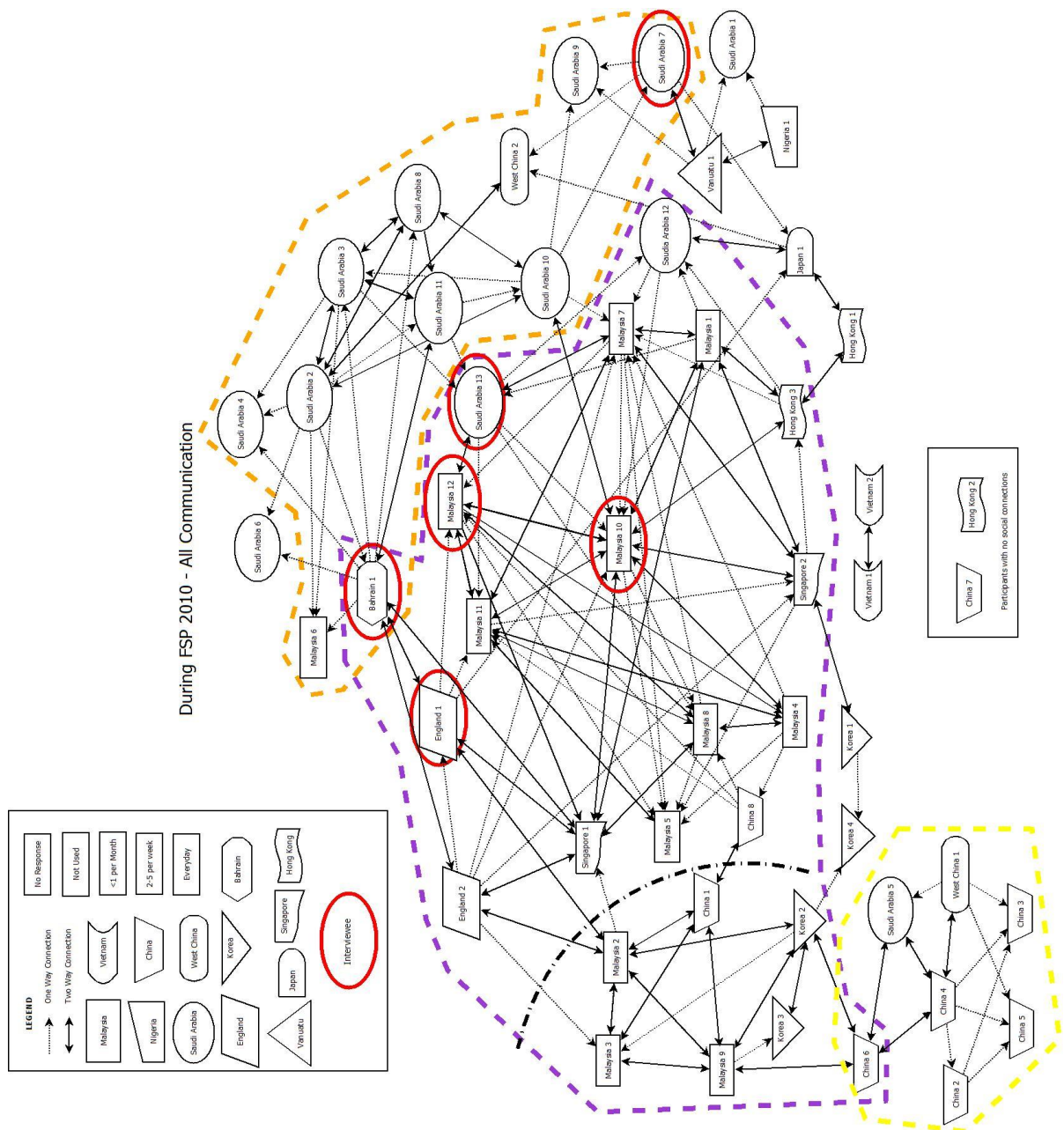


## BEFORE FSP 2010 - All Communication





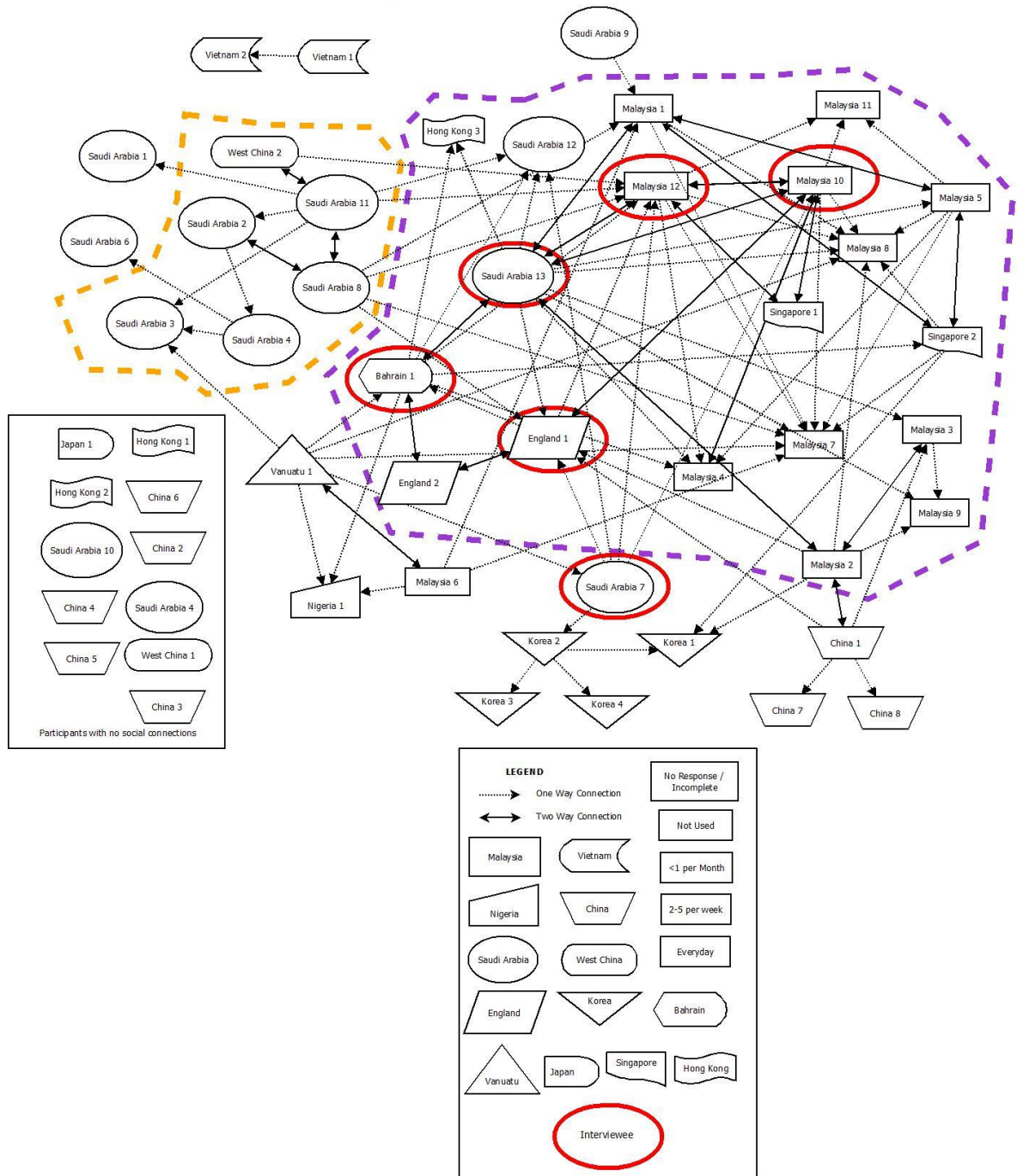




## After (Holiday) FSP 2010 - All Communication

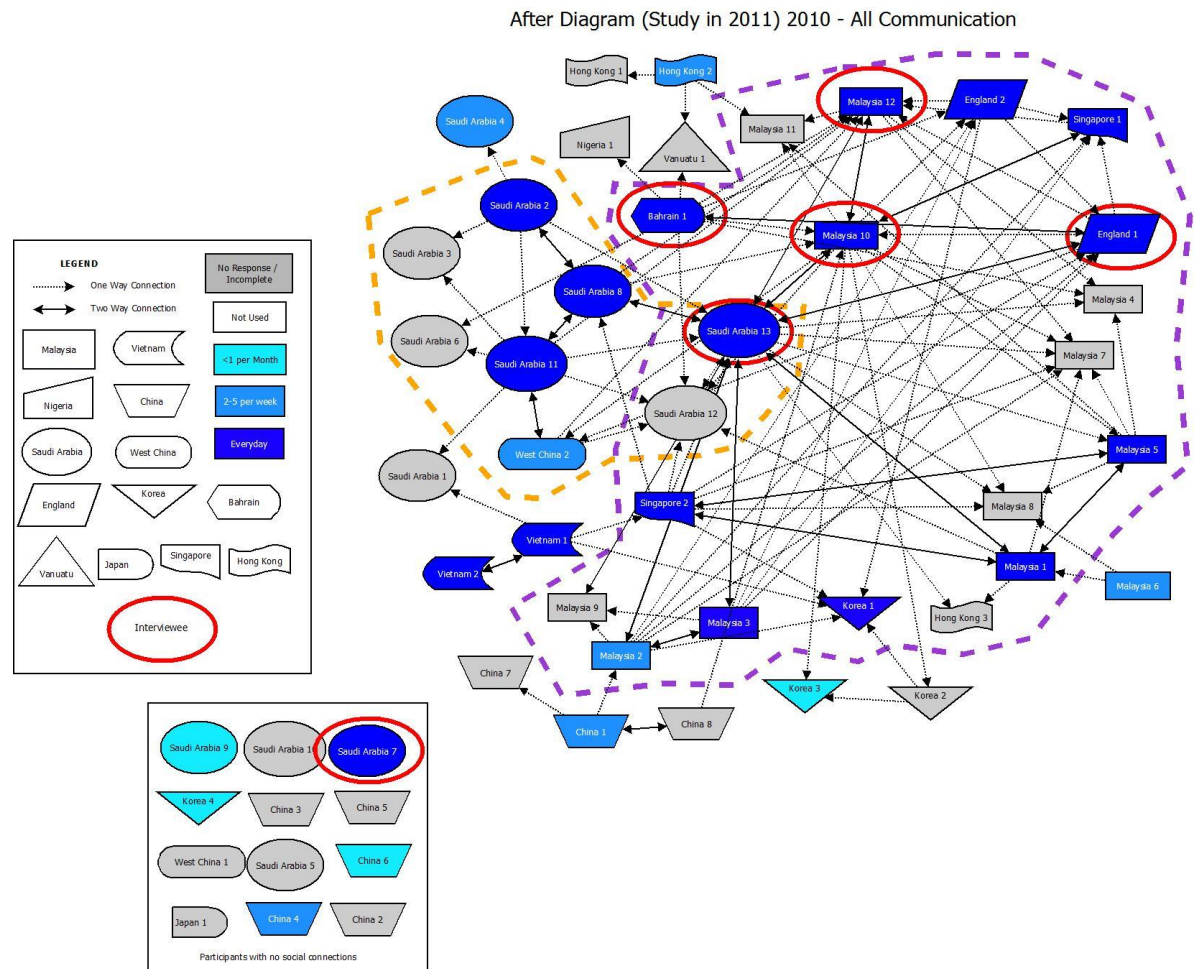


## After (Holiday) FSP 2010 - All Communication



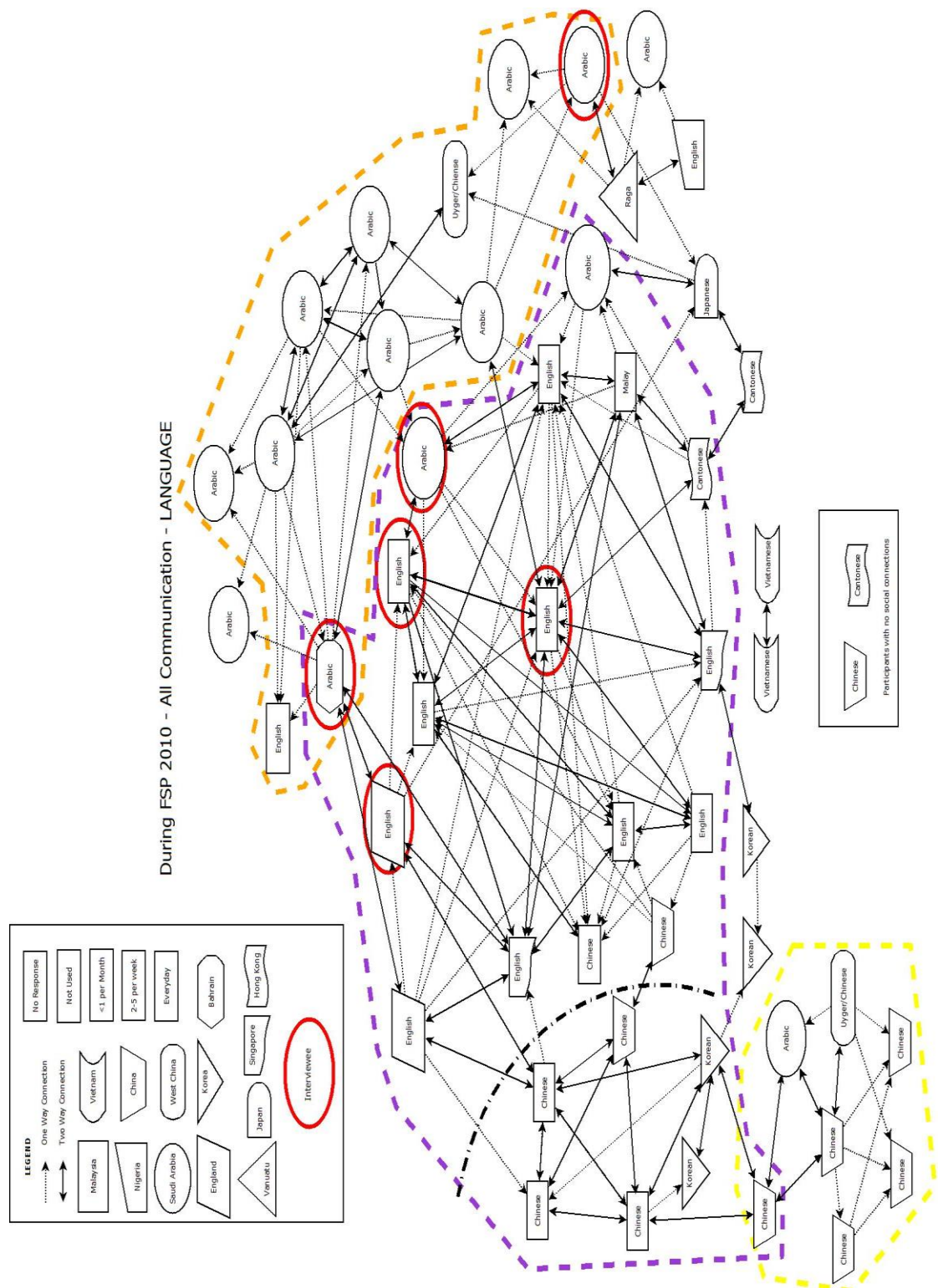


## Appendix 2d – Social Connections Four Months After Finishing Study





## Appendix 2e – ‘During’ Social Network Analysis Diagram Indicating ‘Language’



## Appendix 3 – Semi-Structured Interview Questions

### Interview Outline

Name: \_\_\_\_\_ Date: \_\_\_\_\_ Duration: \_\_\_\_\_

### Questions

#### **Current Situation**

1. What are you doing in 2011?
2. Do you miss the Foundation year? Was it good? Was it bad?
3. Why did you choose to study in Tasmania?
4. Did you find studying with students from different cultures good or bad? Why?
5. Did you make strong friends with people from Foundation program? Have you made strong friendships with students you are studying with in 2011?
6. Do you still interact/communicate with anyone from Foundation? How do you contact them?
7. Would you say your friendships influenced your study in the Foundation course?
8. How do communicate with Foundation program students? Family? Other Friends?
9. Does technology make you feel more connected to your friends and family?
10. How do you like to communicate with family/friends/teachers?

Do you have any questions for me? Comments?



